S 4688.5


# THE LANCET.

No. 4285. Vol. CLXIX. LONDON, SATURDAY, OCTOBER 14, 1905. [Pp. 120+48.


## CONTENTS.


AN ADDRESS on Medical Education in London. Delivered at King's College Hospital on Oct. 3rd, 1905, at the Opening of the Medical Session, by T. CLIFFORD ALLBUTT, M.A., M.D., LL.D., &c., F.R.C.P. Lond., F.R.S., Regius Professor of Physic, University of Cambridge, &c. 1081

A PRESIDENTIAL ADDRESS on Medical Science Forty Years Ago: a Retrospect and a Forecast. Delivered before the Medical Society of London on Oct. 9th, 1905, by Sir LAUDER BRUNTON, M.D., D.Sc.Edin., LL.D.Edin. and Aberd., F.R.C.P. Lond., F.R.S., Consulting Physician to St. Bartholomew's Hospital ..... 1087

### ORIGINAL ARTICLES.

Aneurysm of the Abdominal Aorta. By WILLIAM OSLER, M.D., F.R.S., Regius Professor of Medicine at the University of Oxford.—(*Illustrated*) ..... 1089

On Certain Points in connexion with the Exaltation and Reduction of Blood Coagulability by Therapeutic Measures, and in particular on the Effect produced upon the Blood by the Ingestion of Calcium Chloride, Calcium Lactate, Magnesium Carbonate, Cow's Milk, and other Medicinal Agents. By A. E. WRIGHT, M.D. Dub., sometime Professor of Pathology, Army Medical School, Netley; Pathologist to St. Mary's Hospital; and W. ERASMUS PARAMORE, M.A., M.B.Cantab.—(*Illustrated*) ... 1096

A Case of Diver's Paralysis, with Histological Examination of the Spinal Cord. By W. HALE WHITE, M.D. Lond., F.R.C.P.Lond., Physician to, and Lecturer on Medicine at, Guy's Hospital; and F. A. BAINBRIDGE, M.D. Cantab., D.Sc. Lond., Gordon Lecturer in Experimental Pathology at Guy's Hospital.—(*Illustrated*) ..... 1101

Case of Anencephalic Monster. By R. H. PARAMORE, M.D. Lond.—(*Illustrated*) ..... 1102

Notes on a Case of Toxic or Typhoid Pneumonia. By A. M. ELLIOT, M.B., C.M. Edin.—(*Illustrated*) ..... 1103

Inflammation of the Pharyngeal Tonsil. By P. MCBRIDE, M.D. Edin., F.R.C.P. Edin., F.R.S. Edin., Consulting Surgeon, Ear and Throat Department, Royal Infirmary, Edinburgh ..... 1104

Distension of the Gall-bladder simulating Ovarian Cyst. By JOHN A. C. KYNOCH, M.B. Edin., F.R.C.P. Edin., F.R.C.S. Edin., Professor of Gynæcology and Obstetrics at the University of St. Andrews ..... 1105

A Method of Sterilising Sponges. By F. W. ANDREWES, M.D. Oxon., F.R.C.P. Lond., Pathologist and Lecturer on Pathology, St. Bartholomew's Hospital.. 1106

### CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

Gastrotomy for Removal of a Fork. By J. A. LOWRY, M.B., B.Ch. R.U.I., Assistant Medical Officer of the City of London Asylum, Dartford ..... 1107

Nitrite of Amyl in Gynæcology. By C. F. A. Moss, M.D. Edin. ..... 1107

### A MIRROR OF HOSPITAL PRACTICE.

WESTMINSTER HOSPITAL:
A Fatal Case of Poisoning by Acetic Acid in a Child. (Under the care of Dr. Purves Stewart) ..... 1107

ROYAL HANTS COUNTY HOSPITAL, WINCHESTER:
A Case of Traumatic Rupture of the Duodenum and Jejunum; Operation; Recovery. (Under the care of Mr. H. J. Godwin) ..... 1108

### MEDICAL SOCIETIES.

MEDICAL SOCIETY OF LONDON:
Cerebral and Ophthalmic Complications in Three Cases of Sphenoidal Sinusitis ..... 1109

OBSTETRICAL SOCIETY:
Carcinoma-Sarcoma Uteri.—Ectopic Gestation ..... 1109

ÆSCULAPIAN SOCIETY:
Medical Heresies ..... 1110

SOCIETY FOR THE STUDY OF INEBRIETY:
Norman Kerr Memorial Lecture ..... 1111

WEST LONDON MEDICO-CHIRURGICAL SOCIETY:
The Progress of Intestinal Surgery ..... 1111

GLASGOW MEDICO-CHIRURGICAL SOCIETY:
Presidential Address ..... 1112

GLASGOW SOUTHERN MEDICAL SOCIETY:
Heredity in Disease ..... 1112

### REVIEWS AND NOTICES OF BOOKS.

The Treatment of Nervous Disease. By J. J. Graham Brown, M.D. Edin., F.R.C.P. Edin. ..... 1112

The Diseases of Children. By James Frederick Goodhart, M.D. Aberd. Eighth Edition, edited by George Frederick Still, M.D. Cantab. ..... 1112

The Care and Management of Delicate Children. By Percy Lewis ..... 1113

Experiments and Observations on the Vitality of the Bacillus of Typhoid Fever and of Sewage Microbes in Oysters and other Shellfish. By E. Klein, M.D., F.R.S. ..... 1113

Essentials of Diseases of the Ear. By E. B. Gleason, S.B., M.D. Third Edition ..... 1114

A Manual of Clinical Chemistry, Microscopy, and Bacteriology. By Dr. M. Klopstock and Dr. A. Kowarsky. Translated by Thew Wright, M.D. ..... 1114

The Ophthalmoscope ..... 1114

The Bristol Medico-Chirurgical Journal ..... 1114

The Dublin Journal of Medical Science ..... 1114

### LEADING ARTICLES.

PROFESSOR VON BEHRING ON TUBERCULOSIS ..... 1115

INFANTS IN ELEMENTARY SCHOOLS ..... 1116

THE INTRODUCTORY ADDRESSES 1117

### ANNOTATIONS.

The Metropolitan Hospital Sunday Fund and the Out-patient Department ..... 1118

The British Legation at Tokio and its Medical Officer ..... 1119

Drunkenness and Alcoholism.. 1119

Synæsthesia ..... 1120

Life in the Army ..... 1121

Queen's College, Belfast ..... 1121

A Case of Hydrophobia in Palestine ..... 1121

Religion and Quackery ..... 1122

Railway Travelling in Italy ... 1122

Cleanliness in the Dairy ..... 1123

### THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT PARIS.

The Reception at the Hôtel de Ville ..... 1123

"Le Matin" Gala Performance 1124

The Inauguration by the President of the Republic of the Montigny Sanatorium ..... 1124

The Subscription Banquet ..... 1125

The Closing Ceremony: Professor von Behring's Explanation ..... 1126

The Banquet and Reception at the Elysée ..... 1127

The Sections: Dr. P. Courmont on the Acid-fast Bacilli contrasted with the Bacilli of Tuberculosis; Professor J. Cantacuzene on Experimental Infection by the Parabacille Bacillus; Professor Albert Robin on the "Soil" as a Factor in Tuberculous Conditions and the Methods of Treatment; Dr. Lydia Rabinowitsch on the Causal Factors of Tuberculosis in Mammals and that of Birds and Cold-blooded Creatures; Dr. A. Jousset on Tuberculous Bacillæmia; Dr. Rodet and Dr. Galavielle on Acid-fast Bacilli; Dr. Lorand on Thyroid Insufficiency as an Etiological Factor in the Pathogeny of Tuberculosis; Dr. Nathan Raw on British Work for the Prevention of Tuberculosis ..... 1128–1130

### LOOKING BACK.

(From THE LANCET, Saturday, Oct. 13th, 1827) ..... 1132

VITAL STATISTICS:
Health of English Towns ... 1132
Health of Scotch Towns ..... 1132
Health of Dublin ..... 1134
Analysis of Sickness and Mortality Statistics in London during September, 1905 ... 1133
Vital Statistics of London during September, 1905 ... 1134

### SPECIAL ARTICLES.

Medical School Dinners ..... 1130

The Meeting of the British Medical Association in Toronto ..... 1135

The Services ..... 1135

Measures for Prevention of Infectious Diseases in the United States ..... 1142

Liverpool ..... 1142

Northern Counties Notes ..... 1143

Scotland ..... 1143

Ireland ..... 1145

Paris ..... 1145

Vienna ..... 1146

Constantinople ..... 1147

New York ..... 1147

Notes from India ..... 1148

### CORRESPONDENCE.

Motor Aphasia without Agraphia (Sir W. H. Broadbent, Bart.) ..... 1135

The Medical Register (Mr. H. B. Allen) ..... 1136

The Pygmies in Ancient Egypt (Dr. Edouard Naville) 1136

Chorister's Heart (Dr. G. W. F. Macnaughton) ..... 1136

Sanatoriums and the Eradication of Consumption (Dr. W. B. Herapath Wood) ..... 1137

Webster Memorial Hospital (Dr. J. Cowper) ..... 1138

Congenital Multiple Occlusions of the Small Intestine (Capt. E. Owen Thurston, I.M.S.).. 1138

The Cultivation of the Bacillus Lepræ (Dr. George Turner)... 1138

Varicocele—What of It? (Mr. Lawrie McGavin, Mr. C. A. S. Ridout, Lieut.-Col. Wm. Hill Climo, A.M.S., retired) 1139

Chronic Paralysis of the Intercostal Muscles as a Primary Cause of Dropsy (Dr. Harry Campbell) ..... 1139

Next Year's Election of Direct Representatives to the General Medical Council (Mr. George Brown) ..... 1140

The Radical Cure of Hernia (Mr. R. Stanmore Bishop) ... 1140

The Present State of Medical Practice in the Rhondda Valley ..... 1140

A Possible Cause of Intemperance ..... 1141

The Responsibility of the Anæsthetist ..... 1152

"Doil" ..... 1152

Heating Apparatus (Dr. Wm. Simpson Craig) ..... 1152

An Exhibition of Medical Preparations and Appliances ... 1152

### OBITUARY.

George Walker Thomas Clarke, L.R.C.P., L.R.C.S. Irel. ..... 1148

James R. Chadwick, Boston, U.S.A. ..... 1149

### MEDICAL NEWS.

University of Oxford ..... 1106

King's College Hospital and Medical School ..... 1114

Dinner to Sir Thomas Chavasse 1141

Pass-lists of the Society of Apothecaries of London and University of Durham ..... 1149

The New Cancer Research Laboratories at the Middlesex Hospital ..... 1149

Central Midwives Board ..... 1149

"Dr. Barnardo's Homes" ..... 1150

The Exhibition of the British Dairy Association ..... 1150

Literary Intelligence ..... 1150

The Medico-Psychological Association ..... 1150

Books, &c., received ..... 1150

Appointments.—Vacancies ..... 1151

Births, Marriages, and Deaths.. 1151

Notes, Short Comments, and Answers to Correspondents.. 1152

Medical Diary ..... 1152


FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

# INDEX.

## MEDICAL AND OTHER BOOKS AND PUBLICATIONS.

### COVER.


PAGE

ADLARD & SON:—
Hurd-Sutton Enzymon Hysterectomy 1
Lingard .... Burnati .... 1

BAILLIERE, TINDALL & COX:—
Beale..... Aids to Physiology .... 1
Wrench ..... Med. Lab. Methods, &c. 1
Henry ..... Aids to Chemistry ..... 1
Mayo-Collier Mouth Breathing ..... 1
" Chronic Progressive Deafness ..... 1
Pocket Gray ..... 1

CHURCHILL, J. & A.:—
Butlin ..... Malignant Disease ..... 1

CONSTABLE & CO.:—
Battle & Corner .... Diseases of the Appendix Vermiformis .... 1
Lenmonier.. New Methods of Treatment ..... 1
Wright..... Anti Typhoid Inoculation ..... 1

GLAISHER:—
Crewe ..... X-Rays ..... 1
Herschell .. Indigestion ..... 1
Savill ..... Neurasthenia ..... 1

MEDICAL PUBLISHING CO.:—
Lane ..... Chronic Constipation .. 1

PENTLAND, Y. J.:—
Berry..... Manual of Practical Ophthalmology ..... 1
Cunningham. Text-book of Anatomy .... 1
" Manual of Anatomy.... 1
Offner & Russell.... Physical Diagnosis .... 1
Muir & Ritchie.... Manual of Bacteriology 1
Thomson & Miles..... Manual of Surgery .... 1
Waring .... Operative Surgery .... 1

SAUNDERS & CO.:—
Saunder's Books on Chemistry and Urine Analysis ..... 1

SMITH, ELDER & CO.:—
Marshall & Hurst .... Practical Zoology ..... 1

MEDICAL LIBRARIES, &c.:—
Davidson—Sight-Testing for the G.P. 1
O'Connor Extension Co.—Mechanical Orthopædics ..... 11

BAILLIERE, TINDALL & COX:—
Rigg ..... Constipation ..... 2
Edwards .... Carcinoma of the Rectum ..... 2
Lamb ..... Examination of the Throat, Nose, and Ear 2
Thorne..... Nauheim Treatment .... 2
Vincent .... Nutrition of the Infant 2

CASSELL & CO.:—
Herman .... Diseases of Women .... 2
Morris, H. .. Surgery of the Kidney and Ureter ..... 2
" .. Injuries and Diseases of Genital, &c., Organs .. 2

CHURCHILL, J. & A.:—
Craig..... Psychological Medicine 3
Cripps ..... Diseases of the Rectum 3
" ..... Cancer of the Rectum.. 3
Goodhart & Still ..... Diseases of Children.... 3
Heath ..... Practical Anatomy .... 3
Holden..... Human Osteology ..... 3
" ..... Landmarks ..... 3
Jellett ..... Midwifery ..... 3
" ..... Gynæcology ..... 3
Lang & Abrahams.. German-English Dictionary of Terms..... 5
Morris ..... Anatomy ..... 3
Savill ..... Clinical Medicine ..... 3
Taylor, J. .. Paralysis, &c. ..... 3
Walsham & Spencer .. Surgery ..... 3

CORNISH BROS. (BIRMINGHAM):—
Sawyer, Sir J. Practical Medicine .... 5
" Insomnia, &c. ..... 5

GRIFFIN & CO.:—
Journal of Anatomy and Physiology.. 9
Fleming & Thomson.. Text-book of Physics .. 6

KEGAN PAUL & CO.:—
Taylor ..... Diseases of the Eye .... 9

LEWIS:—
Barrett..... Dental Surgery ..... 44
Barton ..... Administration of Ethyl Chloride ..... 44
Beevor ..... Diseases of the Nervous System ..... 34
Binnie ..... Operative Surgery..... 44
Emery ..... Handbook of Bacteriological Diagnosis ..... 44
Hall & Tilley Diseases of the Nose &c. 44
Harris & Beale..... Treatment of Pulmonary Consumption ..... 44
Higgens .... Ophthalmic Practice .. 44
Jones..... Medical Electricity .... 44
Kenwood.... Public Health Laboratory Work ..... 44
Lewers ..... Diseases of Women .... 44
Parkes & Kenwood.. Hygiene, &c ..... 44
Power ..... Surgical Diseases of Children ..... 44
Radcliffe-Crocker .. Diseases of the Skin .... 44
Suckling..... Movable Kidney..... 44

MACMILLAN & CO.:—
Biology, Anatomy, and Physiology .. 7
Hood..... Treatment of Injuries .. 7
Lockwood .. Appendicitis ..... 7
Manual of Medicine ..... 7
Pathology and Bacteriology ..... 7
Pharmacology and Therapeutics..... 7
Shield ..... Diseases of the Breast.. 7
Smith ..... Differential Diagnosis.. 7
Stonham .... Manual of Surgery .... 7

MACMILLAN.—(Continued).
System of Gynæcology..... 7
System of Medicine ..... 7

PUBLICITY, LIMITED:—
Reinhardt .. The Consumptive Poor of England..... 8

RENSHAW:—
Wood ..... Application of Trusses 9

SANITARY PUBLISHING CO.:—
Jones ..... Modern Drainage Inspection &c. ..... 8
" ..... Modern House Drainage 8
Latham .... Sanitation of Domes in Buildings ..... 8
Maxwell .... Ventilating, &c. ..... 8
" ..... Circulation of Air, &c. 8
Model Answers to Questions ..... 9
Robertson & Port F .... Sanitary Law, &c. .... 8
Vacher ..... Food Inspector's Handbook ..... 8
" ..... Healthy Home ..... 9

SAUNDERS & CO.:—
Holland .... Chemistry ..... 5
Hommagel's Practice..... 5
Ogden ..... Urine ..... 5
Saxe ..... Urine ..... 5
Wolf..... Physiologic Chemistry 5

SMITH, ELDER & CO.:—
Keetley .... Orthopædic Surgery.... 9
" .... Gastric Ulcers ..... 9
" .... Complicated Fractures 9

MEDICAL LIBRARIES, &c.:—
Benoke—Hammering ..... 9
Gilbe —Pohl sher's Rheumatism .... 9
Institute of Hygiene—
The Hygienic Handbook ..... 9
Lewis's Medical and scientific Literary 6
McCahl—
Rare and Secondhand Books .... 9


## OFFICIAL AND GENERAL ANNOUNCEMENTS.


APPOINTMENTS VACANT:—
Borough of Hampstead ..... 80
Bradford Royal Infirmary..... 80
Brighton Throat and Ear Hospital .. 79
Bristol Royal Infirmary ..... 80
Cheshire County Asylum, Macclesfield 79
Chesterfield and North Derbyshire Hospital and Dispensary ..... 79
Cornwall County Asylum, Bodmin .. 78
County Lunatic Asylum, Leicester .. 79
East London Hospital for Children, &c., Shadwell ..... 79
Hospital for Sick Children, Great Ormond-street ..... 79
Hull City and County Lunatic Asylum 78
Hulme Dispensary, Manchester ..... 80
Infant Orphan Asylum, Liverpool.... 78
Joint Counties Asylum, Carmarthen.. 78
Lincoln County Hospital ..... 79
London Hospital, Whitechapel ..... 79
London Hospital Medical College .... 78
Lunatic Hospital, Lincoln ..... 78
M. D. L., Knightsbridge ..... 80
Metropolitan Hospital, Kingsland-rd. 78
Middlesex Hospital ..... 79
Middlesex Hospital Medical School .. 80
New Hospital for Women ..... 80
Newport and Monmouthshire Hos. .. 78
Northampton General Hospital ..... 78
Nottingham General Hospital ..... 80
Paddington-green Children's Hospital 78
Portsmouth Borough Asylum ..... 79
Queen's Jubilee Hospital, Earl's-court 79
North Union ..... 80
Royal Berkshire and West Hants Hospital Bournemouth ..... 79
Royal Ear Hospital, Soho ..... 79
Royal ear Falkirk Hospital, Margate 79
Rubery-hill Asylum near Birmingham 80
St. Mary's Hospital for Women and Children, Plaistow ..... 78
Teignmouth Hospital, South Devon .. 80
Warneford Hospital, Leamington .... 79
West Riding Asylum, Wadsley ..... 78
York Home for Trained Nurses, York 78
Yorkshire Institutes Reformatory, Canal ..... 79

ASSISTANCIES, MEDICAL ..... 87

ASYLUMS, HOMES, &c.:—
Ashwood House, Kingswinford ..... 77
Barham House ..... 76
Barnwood House Hospital..... 71
Bethel Hos. for Mental Diseases .... 76
Bishopstone House, Bedford ..... 77
Buntingford House Retreat, Herts .. 76
Camberwell House, Peckham-road .. 76
Capel Lodge, near Folkestone ..... 77
Chapman, Banham Common ..... 77
Coppice, The, Nottingham..... 76
Cotswold Sanatorium ..... 74
Crookabury Sanatorium, Surrey..... 74
Dalrymple House, Rickmansworth .. 71
Denton Johns' Sanatorium, Parkstone 75
Dr. Rambleigh's Sanatorium, Dartmoor ..... 75
East Anglian Sanatorium, Nayland .. 73
Electrical Ozone and Light Treatment 77
Fairford Retreat, Gloucestershire.... 10
ASYLUMS—(Continued).
Ferguson, Barnet ..... 77
Flower House, Catford ..... 71
Grove House, Church Stretton ..... 71
Grove, The, Catton, Norwich ..... 71
Hadley Open Air Sanatorium, Dunford 73
Haydock Lodge, Newton-le-Willows 72
Holgham Hall, Norwich ..... 77
High Shot House, Twickenham ..... 70
Hitch, Mrs., Hollington ..... 76
Home of Good Hope, Bournemouth .. 75
Home Sanatorium, Bournemouth .... 75
Inverurie Lodge Retreat, Collingburgh 72
King Turner, Chelmsham ..... 77
Lady Superintendent, Brighton ..... 76
Lady Superintendent, Streatham ..... 76
Lawson, Nordrach-on-Dee, Banchory 74
Leigh House, Warwick ..... 77
London Fever Hospital ..... 70
London Open - Air Sanatorium, Wokingham ..... 74
Matron, Bournemouth ..... 75
Melbourne House, Leicester..... 71
Middleton Hall, Co. Durham ..... 71
Mont House, Tamworth ..... 71
Moorcote Open - Air Sanatorium, Eversley ..... 73
Nordrach-upon-Mendip Sanatorium.. 72
Northlands Retreat, Wanaworth ..... 77
Northumberland House, Finsbury-park ..... 77
Northwoods House, Winterbourne .. 72
Norwood Sanatorium ..... 72
No. 445, L.O., Strand..... 77
No. 550, L.O., Strand..... 76
No. 578, L.O., Strand..... 76
No. 601, L.O., Strand..... 76
No. 617, L.O., Strand..... 77
No. 618 L.O., Strand..... 77
Oehli Hills Sanatorium, Elstree-shire 74
Overdale, Whitefield..... 71
Pay, Leeds ..... 77
Portacre, Winchelsea ..... 73
Plas-yn-Dinas, Merionethshire ..... 78
Plympton House, South Devon ..... 71
Restrever Open-Air Sanatorium, Co. Down ..... 74
Shaftesbury House, Formby ..... 13
Springfield House Private Asylum, Bedford ..... 76
St. Andrew's Hospital, Northampton 71
St. Luke's Hospital, N.C. ..... 73
St. Ive, Craven-street..... 76
Stone House, Canterbury ..... 77
Stretton House, Church Stretton ..... 71
Sunshine, Chislehurst ..... 77
Swan, Shoreham..... 77
Thandercliffe Grange, nr. Rotherham 76
Tower House, Leicester ..... 71
Vale of Clwyd Sanatorium..... 75
Warneford Asylum, Oxford ..... 10
West Malling-place, Kent ..... 75
Whitmead Hill Sanatorium, Farnham 73
Woolford House, Exeter ..... 71
Wye House, Buxton ..... 71
Wyke House, Isleworth ..... 71
Yarrow Convalescent Home, Broadstairs ..... 73

COMPANIONS ..... 18

FINANCIAL, &c.:—
Birkbeck Bank..... 78
Equitable Reversionary Interest Soc. 73

HEALTH RESORTS, BATHS, &c.:—
Aberystwith, the Biarritz of Wales .. 75
Bad Ems ..... 76
Dunblane Hydro Establishment ..... 75
Ilfracombe—Cliff's Hydro ..... 76
Stanley's, Matlock ..... 75
South Devon Health & Holiday Resort, Bishop's Teignton ..... 75

HOTELS:—
Barton Court Hotel, New Milton .... 70
Helouan—Tewfik Palace Hotel ..... 70
Montreux Mo el and Chateau, Belmont 70
Mount Pelerin—
Grand Hotel Mont Pelerin ..... 70

HOUSE & ESTATE AGENTS:—
R., Albemarle-street ..... 86
Bedford & Co. Wigmore-street ..... 86
G. A., Tunbridge Wells ..... 86
Hill, Southampton ..... 85
Medical, Redcliffe-square ..... 81
Millar, Son & Co., Pall Mall ..... 86
No. 546, L.O., Strand..... 86
No. 619, L.O., Strand..... 86
No. 621, L.O., Strand..... 84
No. 623, L.O., Strand..... 86
Wyse, Southport..... 86
165, Manor-street, Clapham ..... 16
CHEMISTS AND DRUGGISTS—
Elliott, Son & Boyton, Vere-street.... 84

LIFE & FIRE ASSURANCES:—
General Life Assurance Co. ..... 74
National Provident Institution ..... 76
Prudential ..... 73

MASSAGE:—
No. 400, L.O., Strand..... 69

MEDICAL ACCOUNTANTS, &c.:—
Turner ..... 87

MEDICAL AGENTS:—
Dr. Fiets Hall ..... 80
Lee & Martin ..... 85
London Medical Agency ..... 85
Manchester Medical Agency ..... 80
Manchester Medical, &c., Association 85
Medical Agency ..... 84
Needes, Herbert ..... 85
Needes, J. C. ..... 84
Orridge ..... 84
Pocock & Hadley ..... 84
Professional Agency ..... 80
Reynolds & Branson ..... 80
Scholastic, Clerical, &c., Assoc. .... 81
Turner ..... 82, 83
Wilson & Son ..... 84

MEDICAL SCHOOLS (LONDON):—
Cooke's School of Anatomy ..... 61
West London Post-Graduate College.. 67

MEDICAL SCHOOLS (PROVINCIAL):—
Anderson's College Medical School, Glasgow ..... 67

NURSING INSTITUTES:—
Clapton Nursing Home ..... 67
General Nursing Association ..... 68
Hos. for Sick Children, Gt. Ormond-st. 68
Hyde Park Association of Trained Nurses ..... 70
Leeds Trained Nurses' Institution.... 68
London Nurses' Association ..... 69
Male and Female Nurses' Assoc. .... 64
Male Nurses' Association ..... 68
Male Nurses' Co-operation ..... 68
Middlesex Hos. Trained Nurses' Inst. 69
Mildmay Nursing Institute ..... 69
Nurses' Co-operation, Portland-place 70
Queen Charlotte's Lying-in Hos. .... 70
St. Bartholomew's Hos. Nurses' Inst. 69
St. John's House ..... 70
Temperance Male and Female Nurses' Co-operation ..... 68
Temperance Male Nurses' Co-operation ..... 69
Temperance Nursing Society ..... 69

OFFICIAL NOTICES:—
Central London Ophthalmic Hospital 85
London School of Dermatology ..... 85
Mount Vernon Hospital for Consumptions, &c. ..... 67
New Hos. for Women, Medical School and Hospital ..... 63
Pathological Laboratories, Langham-place ..... 67
Royal Institution of Public Health .... 66
Royal Naval Medical Examination .... 66
St. John's Hos. for Skin Diseases .... 66
University of Edinburgh ..... 64

PARTNERSHIPS & PRACTICES:—
Fosbrs, Burroughs & Calvert, Mortimer ..... 76
London Medical Agency, Strand..... 85
M. dico, Queen Victoria Street..... 87
No. 441, L.O., Strand..... 87
No. 622, L.O., Strand..... 86
No. 624, L.O., Strand..... 86
No. 627, L.O., Strand..... 86
No. 6 8, L.O., Strand..... 86
No. 631, L.O., Strand..... 86
No. 638, L.O., Strand..... 86
No. 642, L.O., Strand..... 86
No. 644, L.O., Strand..... 86
No. 649, L.O., Strand..... 87
Peacock & Hs lev, Clifford-street .... 86
Stocker, Craven-street ..... 87

RAILWAY & STEAMSHIP CO.'S:—
New Zealand Shipping Co..... 78
Royal Mail Steam Packet Co.—Tours 78

SCHOOLS, PREPARATORY, &c.:—
Manchester Physical Training College 67

TUTORS & LECTURERS:—
Fellowship .... 61
Gooch ..... 67, 68
Kerr ..... 63
Knight ..... 61
No. 5, L.O. .. 62
No. 20, L.O. .. 61
Patterson ..... 63
Univ. Exam. Postal Tuition ..... 61
Van Praag ..... 68
Weymouth .... 69


*(For Index to Trade and Miscellaneous Advertisements see page 4.)*

# J. & A. CHURCHILL'S PAGE.

22 Plates. 12s. 6d. net.

## Psychological Medicine:

By **MAURICE CRAIG, M.A., M.D., M.R.C.P.,**

Physician and Lecturer on Mental Diseases, Guy's Hospital; Senior Assistant Physician, Bethlem Royal Hospital.

"Dr. Craig's book, which contains excellent articles on the relationship of insanity to law, case-taking, and treatment, is illustrated by twenty-two very beautiful plates of various morbid states, macroscopical and microscopical, and may be warmly recommended as a safe guide to investigation and treatment to both students and practitioners."—*THE BRITISH MEDICAL JOURNAL.*

75 Illustrations. 12s. 6d. net.

## Paralysis and other Diseases of the Nervous System

IN CHILDHOOD AND EARLY LIFE. By **JAMES TAYLOR, M.D., F.R.C.P.,** Physician for Out-patients, National Hospital for Paralysed, Queen-square; Physician, North-Eastern Hospital for Children.

*THE LANCET*:—"An excellent account. ..... The style throughout is clear and very readable, remarkably so considering the complexity of the subject. The descriptions are liberally illustrated by well-selected clinical cases and the numerous clinical and pathological photographs are well chosen and beautifully reproduced. ..... Will be useful alike to the busy practitioner and to the neurologist."

Eighth Edition. 12s. 6d. net.

## The Diseases of Children.

**J. F. GOODHART, M.D., F.R.C.P.,** Consult. Phys., Evelina Hospital for Sick Children; Consult. Phys., Guy's Hosp.

AND

**G. F. STILL, M.D., F.R.C.P.,** Assist. Phys. for Dis. of Child., King's Coll. Hosp.; Assist. Phys., Hosp. for Sick Child., Great Ormond-st.

## A Short Practice of Midwifery.

By **HENRY JELLETT, M.D., B.A.O. (Dub.),** Ex-Assistant Master, Rotunda Hospital, Dublin.

Fourth Edition. 151 Illustrations. 8s. 6d.

*BRITISH GYNÆCOLOGICAL JOURNAL.*—"Gives due attention to all important points, and omits nothing essential."

***By the same Author.***

## A Short Practice of Gynecology.

Second Edition. With 225 Illustrations. 10s. 6d.

*THE LANCET.*—"A worthy companion of the author's 'Short Practice of Midwifery.'..... Clearly arranged and well written. ..... It is evidently the work of one who is accustomed to teach with method."

## Surgery: its Theory and Practice.

By **W. J. WALSHAM, F.R.C.S.,** and **W. G. SPENCER, F.R.C.S.,** Surgeon to the Westminster Hospital.

Eighth Edition. 622 Engravings (including 28 Skiagrams). 18s. net.

*THE LANCET.*—"The student cannot find a book better suited to his needs."

## German-English Dictionary of Medical Terms.

By **HUGO LANG, B.A.,** and **BERTRAM ABRAHAMS, M.B., B.Sc., F.R.C.P.** 15s. net.

286 Engravings and 4 Coloured Plates. Complete in Two Volumes. 21s. net.

## Savill's System of Clinical Medicine, dealing

WITH DIAGNOSIS, PROGNOSIS, AND TREATMENT OF DISEASE.

VOL. I. LOCAL DISEASES AND PYREXIAL DISORDERS. 12s. 6d. net.

VOL. II. CERTAIN GENERAL DISORDERS, DISEASES OF THE SKIN AND THE NERVOUS SYSTEM. 8s. 6d. net.

"This scheme has been admirably carried out ..... a very useful and practical work."—*THE LANCET (Review of Vol. I.).*

## Morris.—Treatise on Anatomy.

Third Edition. With 846 Illustrations, 276 of which are in Colours. 30s. net.

## Heath's Practical Anatomy: Edited by J. Ernest

LANE, F.R.C.S., Surgeon and Lecturer on Anatomy at St. Mary's Hospital. Ninth Edition. 321 Wood Engravings, of which 32 are coloured. 12s. 6d.

## Holden's Human Osteology: comprising a Descrip-

tion of the Bones, with Delineations of the Attachments of the Muscles, the General and Microscopical Structure of Bone and its Development. Eighth Edition. By CHARLES STEWART, F.R.S.; and ROBERT W. REID, M.D., F.R.C.S. With 59 Lithographic Plates (many Figures) and 74 Engravings. 16s

## Holden's Landmarks, Medical and Surgical.

Fourth Edition. 3s. 6d.

**London: J. & A. CHURCHILL, 7, Great Marlborough Street.**

# INDEX—(CONTINUED).

## TRADE AND MISCELLANEOUS ADVERTISEMENTS.

### COVER.


PAGE

CHEMISTS & DRUGGISTS:—
Maltine Manufacturing Co.—
Maltine with Cod Liver Oil ..... iv
Mortens—Neurosine Frunier ..... ii

FOODS:—
Fry's Malted Cocoa ..... iii
Valentine's Meat Juice Co.—
Meat Juice ..... ii

MED. & SURG. APPLIANCES:—
Bailey & Son—
Abdominal Belts ..... iii

MISCELLANEOUS:—
Merry weather—Firemains, &c. ..... iii

AMBULANCES:—
St. John Ambulance—
Invalid Carriages ..... 61

BILLIARD TABLES &c.:—
Riley, Ltd.—
Billiard and Dining Tables ..... 53

BOTTLE MERCHANTS:—
Isaacs ..... 12
Isitgrien Glass Bottle Company ..... 62
Kilner Bros, Ltd. ..... 9

CARRIAGES, MOTORS, &c.:—
Maythorn & Son—
Medical Coupé ..... 61
Patented seated Buggy ..... 61
Mitchell's Automobile Agency—
Motor Cars ..... 61
Star Motor Agency—
Motor Cars ..... 62
Zenith Motor Engineering Co.—
Zenith Motor Car ..... 62
" Hirer ..... 62
67, George-street, Portman-square—
Secondhand Carriages ..... 61

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Byno-Hypophosphites ..... 30
Bynin ..... 30
Andrus & Andrus—
Hemaboloids ..... 32
Antikamnia Chemical Co.—
Antikamnia Tablets ..... 31
Battle & Co.—
Bromidia ..... 33
Battley's Liquors ..... 34
Bayer Co.—
Heimitol ..... 37
Somatose ..... 39
Jothion ..... 39
Ohaxin ..... 39
Brin Oxygen Co.—
Brin's Oxygen ..... 33
British Druggists—
Hypogen ..... 34
Hypogen ..... 34
Bullock & Co.—
Pepsina Porci ..... 34
Acid Glycerine of Pepsina ..... 34
Burgoyne, Burbidges & Co.—
Unguentum Heyden ..... 46
Novargan ..... 45
Balsoreol ..... 46
Dental ..... 49
Salit ..... 49
Burroughs Wellcome & Co.—
Kepler Malt Extract ..... 41

CHEMISTS—(Continued).
Burroughs, Wellcome & Co.—
Soxin ..... 42
Menthol Snuff ..... 42
Chivers & Co.—
Glyco-Heroin ..... 24
Glyco-Thymoline ..... 25
Lactagol Fluid ..... 50
Cosmo Chemical Co.—
Kuma ..... 35
Cox & Co.—
Pills and Tablets ..... 42
Dunyer Chemical Co.—
Antiphlogistine ..... 29
Dinneford's Fluid Magnesia ..... 37
Duncan, Flockhart & Co.—
Chloroform ..... 26
Chloryl Anæsthetic ..... 30
Evans Sons Lescher & Webb, Ltd.—
Alginoid Iron ..... 24
Fairchild Bros. & Foster—
Eymine Peptonising Tubes ..... 30
Fellows—Syr. Hypophos. Co., Fellows 47
Giles, Schacht & Co.—
Bloodin ..... 51
Grossé & Co.—Kéfirine ..... 22
Howlett & Son—
Mist. Pepsinæ Co. c. Bismutho .. 55
Heyer & Co.—Refo-Setine ..... 37
Hudson—Rumenthol Jujubes ..... 54
Kirby & Co.—
Fargen ..... 22
Knoll & Co.—Styracol ..... 37
Krocehyle Co.—
Burf Boro-Glyceride ..... 54
Macfindale—
Radium Bromide ..... 28
Maltser, Laotus & Bruning—
Vaiyl-Mocetist ..... 19
Albadin ..... 19
Oxaphor ..... 19
Pyramidos ..... 19
Anæsthesin ..... 19
Trigemin ..... 19
Pugnin ..... 19
Guiacanol ..... 19
Newbery & Sons—
Pulvis Jacobi Ver. ..... 37
Ingluvin ..... 36
Bromo Soda ..... 36
Parke, Davis & Co.—
Hæmatic Hypophosphites ..... 27
Elixir Aletris Compound ..... 27
Elixir Buchu, Juniper, and Potassium Acetate ..... 27
Pond's Extract ..... 57
Raimes & Co.—
Slinger's Nutrient Suppositories.. 48
Salamon & Co.—Purrest Chicroform .. 37
Sanatogen Co.—Sanatogen ..... 45
Savory & Moore—
Pancreatic Emulsion ..... 45
Schimmel & Co.—Pollacura ..... 54
Scott & Bowne—
Scott's Emulsion ..... 55
Tamar Indian Grellon ..... 54
Zimmermann, A. & M.—
Peru-Emaline-Lactate ..... 51
Nafalak ..... 52

FILTERS:—
Defries & Son—
Lysoombe & Co.'s Apology ..... 51

FOODS:—
Allen & Hanburys—
Allenburys Milk & Cereal Diet.... 37
Armour & Co.—
Glycerine Extract of Red Bone Marrow ..... 49
Aylesbury Dairy Co.—
Humanised Milk ..... 10

FOODS—(Continued).
Benger's Food, Ltd.—
Benger's Food ..... 17
Batchler's Diabetic Preparations .... 54
Bonthron & Co.—
L'mogen Biscuits ..... 61
Nursery Biscuits ..... 61
Bovril (Limited)—Invalid Bovril .... 15
Brand & Co.—Meat Juice ..... 46
Cailler's Milk Chocolate ..... 10
Callard & Co.—
New Diabetic Foods ..... 60
Digestible Tea Syndicate, Ltd.—
Famous Tea ..... 59
Fairchild Bros. & Foster—
Pancipeton ..... 32
Foods, Ltd.—
Mosslaya Food ..... 59
Frame Food Co.—
Frame Food ..... 19
International Fleischon, Ltd.—
Plasmon ..... 13
McCowan—Atlantic Oysters ..... 61
Nestlé—Milo Food ..... 14
Oxo ..... 61
Robb & Co.—Foods ..... 59
Theinhardt's Food Co., Ltd.—
Hygiama ..... 60
Tibbles' Vi-Cocoa, Ltd.—Vi-Cocoa.... 14
Van Abbott & sons—Gluten Flour.... 58
Virol Ltd.—Virol ..... 58
Wetford & sons—
Humanised Milk ..... 13
Ames' Milk ..... 13

FURNITURE, &c.:—
Carter—Invalid Furniture ..... 60
Maple—
Consulting room, Library, &c., Furniture ..... 65
Ward—Invalid Furniture ..... 12

HOSIERS, &c.:—
Cash—
Invalid's Nightdress ..... 53
Wathabia Maternity Binder ..... 53

MED. & SURG. APPLIANCES:—
Barker Massage Machine Co.—
Barker Massage Machine ..... 65
Brady & Martin—
Anal Speculum ..... 13
Burroughs, Wellcome & Co.—
Bandages and Dressings ..... 43
Sanitary Towels ..... 43
Cox—X-ray Plate ..... 10
Heal & Son—
Hospital Bedsteads and Aseptic Furniture ..... 45
Hooper & Co.—
Rustic Water or Air Beds ..... 13
Maw, Son & Sons—
Artificial Limbs, &c. ..... 11
May, Roberts & Co.—
Absorbent Pieces ..... 10
Cretan Woods ..... 53
Gamgee Tissue ..... 10
Lint ..... 10
Waterproof Sheetings ..... 10
Millikin & Lawley—Osteology, &c. .. 11
Pope & Plante—
Elastic Stockings ..... 64
Abdominal supporting Belts ..... 64
Robinson & Sons—Gamgee Tissue .... 9
Thermogene Co.—Thermogene ..... 63
Wood—
Baroka Crêpe Velpeau Bandages.. 60

MINERAL WATERS:—
Conqueroville Pavilion ..... 56
Davis—Tarasp Water ..... 56
Hogg & Son—Aërated Lynttina Water 56

MINERAL WATERS—(Continued).
Ingram & Royle, Ltd.—
Carsbad Salt ..... 48
Borax ..... 49
Robinson's Concentrated Waters .... 59

PHOTOGRAPHY:—
Martin—Developing Reliable Film .. 39

PRINTERS & ENGRAVERS:—
Cooke & Co.—
Brass Name Plates and Lamps .... 51

SANITARY APPLIANCES, &c.:—
Aymard Patent Milk Sterilizer Co.—
Milk Sterilizer ..... 29
Condy's Fluid Works—
Condy's Crystals ..... 11
Pierson—Manicol Process for Supplying Hot Air ..... 29
Simon Bros.—
Hall's Distemper ..... 32
Southall Bros. & Barclay—
Accouchement Sets ..... 9
" Sheets, &c. ..... 9
Wright, Layman & Umney—
Wright's coal Tar soap ..... 50

STATIONERY, &c.:—
John Heath & Co.—Pens ..... 10

TAILORS, BOOTMAKERS, &c.:—
Anderson's Bristol Rubber Co.—
Naiadia Waterproofs ..... 64
Bourbon Boot Store—
Frederick Root ..... 11
Russian Fur Co.—
Gentlemen's Fur-lined Overcoats 62

VACCINE LYMPH:—
Allen & Hanburys—
Calf Lymph ..... 61
Assoc. for Pure Vaccine Lymph .... 62
Bims—Glycerinated Calf Vaccine .... 63
Jenner—Institute for Calf Lymph .... 63
Mebman—
Glycerinated Pure Calf Lymph .. 63
Renner's Calf Lymph Establishment.. 63
Wyleys, Ltd.—Calf Lymph ..... 63

WATCHMAKERS, &c.:—
Benson—Doctor's English Watch .... 66

WINES, BEER, SPIRITS, &c.:—
Buck & Co.—
"G. B." Diabetic Whisky ..... 57
Bishop & Sons—
Brut-Royal ..... 62
Brown & Fish—
Fine Vintage Brandy ..... 60
Buchanan—
Special Scotch Whisky ..... 58
Gautier's Liqueur Brandy ..... 55
Martell's Three Star Brandy ..... 47
Simpson & Co.—Scotch Whisky .... 61
Whitewav's Devonshire Cyders ..... 56

MISCELLANEOUS:—
Bruce—
Safety Parabolic Reflector Lamp 19
Cyrus—Live Animals ..... 59
No. 574, S.O., Strand—
Secretarial Work required ..... 59
No. 577, L.O., Strand—
High Frequency Apparatus for sale ..... 59
No. 618, L.O., Strand—
Charge of Child required ..... 59
Osborne, Garrett & Co.—
Kropp Razor ..... 12



EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

## SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

## ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto. | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant... ... ... | Ditto. | 0 4 6 |
| | Every additional line | 0 0 6 |

Situations Wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.
Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, *accompanied by a remittance.*

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Order (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith & Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

OFFICES: 423 AND 424, STRAND, LONDON, W.C.; AND 1, 2, AND 3, BEDFORD STREET, ADJOINING.

# An Address
on
# MEDICAL EDUCATION IN LONDON.

*Delivered at King's College Hospital on Oct. 3rd, 1905, at the Opening of the Medical Session,*

BY T. CLIFFORD ALLBUTT, M.A., M.D., LL.D., &c., F.R.C.P. LOND., F.R.S.,
REGIUS PROFESSOR OF PHYSIC, UNIVERSITY OF CAMBRIDGE, ETC.

GENTLEMEN,—When the distinguished invitation of your Medical Board to open this session was conveyed to me my responsibility was lightened by a proposal of the subject of my address—namely, Medical Education in London. London, like every other great centre of education, has its own problems and its own difficulties, but these problems and these difficulties cannot be solved without the illumination of the principles which are true for education everywhere and always. If in England these principles are little heeded by the public, and if accordingly secondary education in England is in grievous defect, it is not for want of preaching. From Matthew Arnold and Michael Sadler to the humble empiric who ventures into the pulpit to-day, of preachers there has been no lack. If I am qualified to deal with the subject yet again, it is that all my life I have been engaged in teaching in centres so different as Leeds and Cambridge, and ought from such conflict of conditions to have won some wisdom. If without the added dignity of my office I should scarcely dare to address you, on the other hand I must beware lest I give an official colour to my opinions, lest I seem to engage my University in doctrines which it might have no mind to. *Cucullus non facit monachum;* whatsoever then may be inconveniently said by the professor pray write down quickly to the account of the individual.

## EDUCATION AND INSTRUCTION.

Education, as contrasted with instruction, is a drawing forth of faculties, a quickening, enlarging, and refining of them when brought out, and an establishment of them in habits, so that virtue and reason become easy and pleasant to us. The word is used of mind rather than of morals or of the powers of the body, but by mind we signify both intellect and imagination, and their issue in right action. The more complex the organism can become the more stable it will be, the more it will be in touch with outward contingencies, the more it can use and modify these conditions, the more will be the play at the periphery of the organism, the more, in a word, the life. Education then is not the formation of a rigid framework but of the capacity for ideas and for various and supple adaptations. But, speaking generally, and within civil societies, individuals vary more than circumstances; in other words, out of similar circumstances individuals draw widely different advantages, so that although up to a certain period of life education may be laid out on broad indiscriminate lines proper for all young persons, yet for adolescents by rapid degrees it must become more and more diverse and several, dividing itself into the education of classes, of groups, and of individuals. Now, such specific or technical educations are difficult only in the sense of the difficulty of persuading the British parent of the value of any education whatever; the ends and the methods are pretty clearly seen; the means it is which are wanting, the means of money, of equipment, and of time, which is money, and the provision and endowment of those engines for making knowledge, called universities, without which sources the technical colleges would soon dry up. The problem of education in modern England is that of general schooling, of ascertaining the modes which shall prove most valuable, in the first instance, to put each man during his youth in touch with the sum of conditions under which he is to lead the best life possible to him; this done he may the more efficiently be adapted to specific or personal functions. Although these personal and specific conditions are never so narrow and so specific as to prevent some occupation with those wider conditions which were held in view during his general education, yet without a somewhat fuller sense of the sum of the conditions of life he cannot measure the relative values of things; he will, as we say, lack common sense. The importance of a universal training of the instrument of mind before the adaptation of it to special engagements will be better understood when we realise that truth is neither wholly without us nor wholly within us, but is a function of fact and temperament. Now temperament is partly native but largely also the creature of habit, and habits—such as the habit of virtue and of comprehensive and precise thinking—are the creatures of education, and especially of education in the plastic years of life. Thus the man whose mind has been built up on universal lines, whatsoever his calling, is enabled to free himself from the conventions and temporary notions of the "practical man," to distinguish the important from the unimportant truths, and to drop swiftly upon cardinal features—upon the facts which matter.

Now—to consider preliminary education first—to teach every boy everything is obviously impossible; the difficulty is so to select certain things from the whole of things as best to educe universal conceptions or ideas. That we have been successful in creating such a general education no one will be hardy enough to assert. From our public schools our young men derive many fine qualities. As Herodotus says of the Persian youths, they are taught to ride and to speak the truth; and indeed, when our country loses its manliness and its veracity it will lose all things. But these fine qualities do not meet the sum of conditions under which the Englishman has to live; he has to do more than to speak and to act with spirit and uprightness and to read the sporting papers with intelligence. If he is to be equal to the conflict of modern life he must be able to reason upon man and nature, to measure his capacities, and to see the trend of events. For these ends besides energy and will he must have some intellectual seriousness, some endurance of attention, some self-knowledge, and some ideas: qualities eminently in defect in the average products of our public schools. Mistrusting their own capacities these youths become entangled in an awkward and artificial self-consciousness; devoid of ideas they become incrusted with a cake of convention and imitativeness. Their intellects are ill-trained, the nourishment of their imaginations is not even thought of. Thus in later life they remain but too often incapable and even intolerant of ideas, that is, of large and systematic conceptions of present and coming events; and consequently they are incurable empirics and have no higher philosophy than that of muddling through. Now even if such may have been your start in life from school you have now before you in the education of a physician a training no less manly but one which, as a moral and intellectual training, I had almost said is incomparable. Even for those of you who are unable to undertake the more arduous and more costly course of a university education, the education of the hospital and technical school is one to develop the highest qualities of the mind and to kindle them in the warmth of hope and charity. With all men you will learn the evil in the world, but you will go from strength to strength in the faith of making it better.

Now the word university means originally a corporation, but it happens also to connote an education dealing chiefly with these universals—with habits of common sense and breadth of faculties, without which even multifarious learning will be disfigured by pedantry or crankiness, as in the great Roman scholar who, in a discussion with Erasmus on the immortality of the soul, rested his denial of a future life on the authority of the elder Pliny. Moreover, every man has to be educated for more than one set of duties. As no two men are alike, so each of us can expand and vary only within a certain pre-ordained quality or scheme about his own possibility of development. In most people, perhaps in all of us, some of the innate capacities must be sacrificed—an uneasy reflection; but, if so, then which or how much of them? The all of each of us is not wanted: which part of us shall be renounced? About this, at some stage, teachers and pupil may begin to disagree, but out of it the pupil should learn at least the chief of lessons—the lesson of humility. Sacrifice is one of the laws of life, yet it must be sacrifice for some higher end. Admirable, for instance, as is an education of all the faculties—"culture" as we are wont to call it—yet culture turns into a selfish pride if no part of it is subordinated to education in good citizenship; for an aggregation of cultured and consummate personalities

without some higher unifying influence would not make for the highest national life. The sacrifice of culture for the more specific, and often indeed drier and narrower, purposes of a trade or profession—the grim *Ernerbsfrage*—is more common and painful. And unhappily only too frequently it is a wasteful sacrifice; for want of private means, or of public aid, the pupil at a critical age is compelled to renounce extent of learning, and the training of some of his higher faculties, for a technical instruction which may narrow his outlook on life and starve those potential qualities for the rest of his days. Yet even such renunciations, if inevitable, are sanctified by a submission to duty and by the faith that after all each man is his own best educator.

We can scarcely hope that the time is at hand when most people will be able to devote time to general training in all three stages of education; many of us must turn to special duties even after the primary school, and many after the secondary school; so that the students who for the larger development of their faculties can proceed to a university must always be comparatively few; still fewer are they who can spare the time to complete a university course before turning aside on the narrower lines of professional or commercial instruction. The man who can do this will go much farther in later life than he would have done had he turned aside into technical lines at an earlier stage; still, as things are, most men have to sacrifice more or less of their future to the needs of present livelihood. And happily the alternatives are not so deeply separated as at first they may seem to be; it is found, as we might expect—such are the teeming wealth, the infinite interweaving, and the essential analogies in men and things—that there is no difficulty, at any rate in the later stages of education, in using for general training broad principles in any one of many faculties; so that, for him whose technical instruction must begin prematurely, a general training may still be continued on principles of that kind which in their more and more special application will form the substance of his calling in life. For university training differs from technical, not so much in the kind or field of the subjects taught as in the more comprehensive, more deliberate, and more disinterested methods of teaching them, the wider outlook upon them, and the awakening of curiosity and research. Nevertheless, it remains true, and even obvious, that for the best education a completer general training in fields other than those of the future calling must be richer in results. How lamentably the prevalent literary education fails even in that *exigua cognitio naturæ*, which even the humanists prescribed, scarcely falls within our subject to-day. But with a pardonable pride I may recall an early advocate of scientific education in the person of my great-grandfather, John Allbutt, a successful schoolmaster in his day, who wrote a primer for this purpose which had some vogue. I quote from the twelfth edition (1817): "I am convinced by experience that children might be taught much earlier than they are the elementary principles of many sciences if these were sufficiently simplified and divested of technical phrases, and these," he adds, "would give correct ideas of things with which men are daily conversant."

It is freely said of the abler men in our laboratories that those who enter them with minds already expanded on other kinds of study, such as language and literature, bring to the sphere of scientific studies a riper understanding and draw from them larger immediate powers and a richer endowment for later life. Professor Ostwald told me that it is the good custom of students in the German universities to attend other lectures than their "Fach," so that in every university there are always one or two professors whose lectures on some such subjects perhaps as history, literature, or philosophy attract large bodies of students from all faculties. By these undergraduates to stick wholly to one's own is regarded as a poor and narrow thing. Once more, if the enrichments of a university education consist in its own breadth and variety and in the maturing of the student's understanding, it confers another endowment no less precious: it establishes the habit of study—a habit which rarely gains any strength or fixity at school or technical college, but when once established belongs to a man for the rest of his life. In the university he sees maturer men devoting themselves to a disinterested love of knowledge, to a steady and faithful pursuit and furtherance of it for its own sake; he sees, also, the infinite variety of intellectual operations and perceives that knowledge and wisdom are not summaries, schemes, or mysteries, but are quick and glowing with a manifold and many-coloured life. And not only does he admire the leaders of research but he is also shoulder to shoulder with eager undergraduates themselves pressing forwards not on one only but on an infinite variety of pursuits and interests, with the general bearings of which he also gains some familiarity.

### THE FUNCTIONS OF A UNIVERSITY.

It appears, then, that the function of university education is not instruction in the special lines of a profession or trade, however these ends may incidentally be promoted, but in expanding and enlarging the mind and making it a more and more perfect instrument of knowledge and progress, whatsoever its destination. The mind so educated will regard whatever is laid before it more truly and will think upon it more truly; it becomes analogous and assimilated to a wide horizon of the world in which it is to live and work. Christopher Wordsworth (Scholæ Academicæ, p. 171) writes that a university "while aiming at educating professional men never pretended to give the final practical training which is required for every profession. Even in the education of the clergy, to which they gave special attention, the universities attempted to educate them in scientific theology rather than to impart even the elements of the pastoral profession," and so, he adds, "it was with medicine (and, as we may now add, with engineering); the student received the grounds of a valuable education and some theoretical instruction but was sent to look elsewhere" for the technical work of qualification. If this be so, and no one will seriously contend to the contrary, a university which lays itself out chiefly to instruct in the technical attainments of a trade or profession departs from its proper function of training the mind and increasing knowledge, and enters into competition with schools of technical instruction, such as the hospitals, the Inns of Court, workshops, and the many other various special institutions. In testing, then, from stage to stage the progress of its students the university will look not so much for technical and empirical knowledge and adroitness, or to the amassing of detail for particular uses, as to the training of their minds and their grasp of principles. And for these results, for the breadth, ease, and naturalness with which they have learned to think and to conceive, will its degrees and distinctions be bestowed. It is too commonly supposed, and very erroneously supposed even by some who ought to know better, that if a professional or technical instruction be screwed up a little higher and examination made somewhat stiffer the successful candidate should have a claim for a university degree—for the degree of M.D. let us say. Or men will submit that 12 or 15 years in the practice of a profession should give them claims to such university stamp. But we have seen that the function of the university is not qualification for the practice of any art or trade but is a training of the mind, a formation of habits of study, of insight, of easy handling of ideas, and of methodical research—an opportunity which is available before, and unless in exceptional cases only before, the technical stage of study is entered upon. After our plastic years, and under the pressure and cares of after life, such a training is rarely achieved.

The universities of the United Kingdom then step out of their function when they undertake, as they do, to issue with their degrees in medicine a licence to practise. In my own university the M.D. degree is often bestowed, and is properly bestowed, on persons who never intend to practise medicine and who would be much embarrassed if in any emergency they were called upon for this office. Nor should it be any specific concern of the university how well or how ill its graduates may practise medicine; all that the university should be responsible for is that its graduates have had a certain development of mind and imagination. And, as a matter of practice, its tests for these results are much hampered by its incongruous responsibility for the lives of His Majesty's subjects; its examinations have consequently to deal with many matters of memory and mechanical device which throw little or no light upon the breadth or depth of training or upon the formation of habits of study or research; indeed, they crowd out more or less the proper tests for such edification. Now the safety of the public being a State concern the testing of medical efficiency is the duty of the State itself and this responsibility the State assumes in practically all other European countries. In the United Kingdom certain medical corporations, under the supervision of the General Medical Council, ought to be entrusted by the State with this function.

Now, gentlemen, I know you cannot all have university

educations—or, at any rate, not in any near future. Many of you on leaving school have no choice but to complete your professional education in the five years' minimum, a period shorter by a year than in other chief European countries. In this case you have to be satisfied with what your school may have done for your general education—too often, I fear, a paltry result enough, not so much by your fault or even by the fault of your masters, but of our defective methods of secondary education. To learn your profession in five years means that you will get some education and suffer inevitably much cram. You cannot then make yourselves into philosophers or investigators unless by a happy turn of nature you contain in yourselves some rare capacities and aspirations which by chance were not choked by the public school; such an one must be content, then, with the honourable ambition to become at any rate a competent practical physician, shrewd, resourceful, and unselfish, a guide to health and a stay in adversity. Even in the narrower field of professional instruction—I am speaking of the ordinary man—a large scientific education is not to be had in five years. Let us think for a moment what it must contain: the elements of physics, something more than the elements of chemistry, a large and minute knowledge of anatomy and physiology, so far no mean education; then on this foundation to build the superstructure of pathology, medicine, and midwifery; to spend a few weeks in a fever hospital, in a children's hospital, in a dispensary, in several institutions for diseases of the eyes, ears, throat, and skin; to practise anæsthesia; to obtain some knowledge of diseases of the mind; and to add to these the elements at any rate of medical jurisprudence, hygiene, and public health is formidable indeed. Yet still upon this burden of subjects many enthusiasts are yearning to pile more, such as fuller courses on biology, chemical physiology, bacteriology, and pharmacology, not to mention such subjects as the history of medicine, in the absence of which it is said, truly enough, that a medical education cannot be complete.

Now, gentlemen, in the all-round or university sense this is true; without these subjects and without a considerable familiarity with the principles of them a university ought not to grant its degree of M.B. or M.D. But, happily, there are among us men loved and respected as members of our beneficent profession who have never been grounded in these principles, furnished with these ideas, or stored with all this knowledge. None of us are more ready to lament this deficiency than such men themselves; yet when we fall sick we thankfully avail ourselves of their aid and consolation. Nay, may we not go still farther and admit—we university men and consultants—that when it comes to the cure of disease it is by the closer converse with the patient, the little daily dexterities, the cautious but shrewd empiricism, the tact and attention which by easing and modifying abstract lines of the treatment adapt them to the peculiarities of the individual, day by day meeting quickly every new symptom and contingency by this incidental drug or that little change in diet, that a family physician who may have enjoyed little beyond the ordinary advantages of a technical training, nevertheless compasses the cure of the individual case on which the consultant can but advise in general terms? Each has need of the other; the practitioner who had not the advantage of a university education desires the easy grasp of coördinating principles, the wider range of experience and of outlook on facts, the richer knowledge and the keener perception of the mists of ignorance of the university graduate; the graduate, on the other hand, admires the *ingenium versatile*, the more homely but not less indispensable and even more varied abilities and adroitnesses of the country doctor. The most accomplished physician is, of course, he who has combined both real and practical education, who is armed with technical dexterity, versatility, and resource, as well as illumined by the ideas and guided by the mental and imaginative discernment which are born of a large, deliberate, and inventive education. How the unhappy division of our profession into medicine and surgery has defeated this integration of faculties I need not repeat here, as I have set this aspect of our education forth at length in my "Historical Relations of Medicine and Surgery."

### THE ARRANGEMENT OF THE MEDICAL CURRICULUM.

If, then, it is a heavy task to get into five years even a technical education, let alone a more liberal and extended training of the mind, to get into five years an instruction to which in Germany, France, Italy, Holland, Belgium, or Switzerland six years at least are devoted, and which in a university course, modeled from the beginning on larger lines, must occupy from six years to seven, how are we to use to the best purpose this five years' course for the man who has not the means, or perhaps not the kind of ability, to enable him to enter upon a full university career? One way of doing it is to drag the university training down to the level of the technical, to give the M.B. and M.D. degrees for a course which scarcely pretends to rise above the ordinary five years' professional instruction, however crowded and crammy this may be. Or, if we resign the university to more fortunate men, what are we to think in our serious moments of a technical instruction in which, as now arranged, medicine, surgery, and midwifery, in all the many branches which we have enumerated, are to be taught in part of the fourth year and the fifth—in 16 to 20 months? No wonder at the development of coaching—that is, not of making men but of stuffing them; no wonder at the stream of cram-books pouring from the printing offices; no wonder at the "window dressings" for examination; our wonder we will keep for the young men who, under such a drill, come out of it with any freshness of mind left, and with any better mental furniture than trite professional formulas. Now, although universities must be designed from beginning to end on other and more deliberate lines, yet for those students who cannot afford a university education what they have time for ought to partake of a university character, and, generally speaking, this means for the Institutes of Medicine teaching in universities and by university professors. A few exceptional teachers, men of remarkable natural endowments, may teach admirably a subject which is not to be the business of their lives, but this can rarely be the case. A teacher who devotes an inconsiderable part, or none, of his best hours to research cannot long hold his place as a fertile and effective teacher. Moreover, if I may contribute my dole to a current controversy I would opine that no teacher reaches his best till middle life. Not till then does he gather the fruits of a rich experience or attain to a rich and vital sense of our ignorance; not till then does he wholly escape from formula and routine; not till then does he learn what to leave unsaid; then it is that erudition mellows into wisdom.[1] It is fatal to good work for the teacher to see ahead of him and beside him other purposes, other ambitions in life, than those with which he is immediately and provisionally concerned. Education then, speaking generally, if it is to be of a university character—if, that is, it is to be more than stuffing—must be in the hands of men whose lives are devoted to it. If it is to be a development of mental faculties and to penetrate to the principles of its subjects it must give time for reflection, for earnest investigation, and for surrender to the personality of the teacher. Yet it is this very time element which is wanting—time in which we are to learn medicine, surgery, midwifery, fevers and mental diseases, the elements of ophthalmology, otology, laryngology, dermatology, and all the rest of them, not forgetting the many elaborate methods of modern diagnosis of which the family physician—often far from expert help—cannot afford to be ignorant of, yet which, after he has left the special fields in which such instruction is provided, he cannot easily learn. I repeat that to devote, as at present, but some year and a half to these manifold final professional classes is, on the face of it, absurd. Surely one moiety of his whole period—two years and a half—is barely enough to devote to the matter which is to be the main business of his life. For the summary education for a diploma I repeat we have been moving on the wrong tack, and moving away from the stouter and truer methods of two generations ago. For two generations we have been loading and loading this brief curriculum as if we desired to teach many things ill rather than a few things well. Now we have seen that one may spend a lifetime on many acquirements and yet be uneducated. Our forefathers thought, and I agree with them, that the backbone of medical education is anatomy, that the right way to educate is to teach a few subjects broadly and deeply, and that the right way to build is to begin with the backbone. Young men love to do something with their fingers, and their instinct is a true one. Finger-work does more than add itself to thought and memory, it multiplies them. The fingers are the busy builders of the

[1] It is some 30 years since I read a paper to the Leeds Philosophical Society to illustrate what I believe to be the truth—namely, that the greatest achievements of the human mind have nearly always found their consummation not in the earlier but in the riper decades of life. Thus Regius professors may supplement each other's researches.

brain. How admirable a discipline anatomy is for the young student; how it confirms him in quickness of eye, in accuracy of fact, and in coördination of facts; how it displays to him the marvellous contrivances and adjustments of organised bodies; and, with the sidelights of modern biology and embryology, the stupendous achievements of mutation and selection, are advantages which need not be laboured over again by me. As an initial training anatomy is better suited to youth than the more abstract principles of chemistry and physics. And as modern research is integrating physiology more and more with anatomy, so structure and function—two aspects of one subject matter—are becoming more and more associated, to the advantage and enlightenment of the student. The movement towards university teaching of these cardinal subjects, a movement which I am here to-day to celebrate, has then my cordial goodwill and advocacy.

In his first two years the student who only seeks a diploma should make his own a knowledge of anatomy and physiology, as broad and thorough as university teaching can make it, a discipline to be broken into as little as possible by intercurrent diversions. The elements of physics the student should bring with him from school, where mechanics should form a vitalising part of his mathematics. With chemistry the case is different; I agree with Sir William Ramsay that this is not a good subject for boys; nor, indeed, in the course for a diploma has it proved possible to teach chemistry on the scale of a pure science, to teach it comprehensively for its own sake and as mental training. In a five years' course it is, and perhaps can be, taught only as a technical department—introduced, that is to say, partially and incidentally as immediate utility requires; but after this manner, as pharmaceutical chemistry, as physiological chemistry, as an instrument of clinical diagnosis, and so forth, it should accompany the paramount and thorough training in anatomy and physiology and be carried forward with the whole course of medical instruction.[2] Under present methods the student in his first year fags up some rule-of-thumb chemistry, with no great scientific advantage and on no comprehensive scale; and when his first examination is over dismisses this subject from his mind; his receptiveness has its limits and the ship must be lightened. This kind of education is not edifying, so the more reason that anatomy and physiology, on the other hand, should be taught scientifically and for their own sakes—taught, that is, on university methods, taught as education for universal as well as for technical ends; and, as at least as much chemistry would be learned in a utilitarian way as is learned at present, in two full years a really solid scientific foundation would be laid; then the three following years would give more adequate time for the medical studies of men whose minds had received this sound training, and the anxious candidate would not have to spend his last and most precious year with his nose in his books.

There are not a few physicians who, unable to avail themselves of a fuller education at the commencement of professional study, would gladly enlarge their education at some later time of life; what facilities do we offer for advanced study? Is any student, indeed, when just released from the wards of a hospital at the end of his fifth year, quite fit for private practice? We are assured that he is not, not even if after qualification he has held the usual house appointments; that for private practice there is still much in which even a highly educated student is ignorant or unskilled. My old friend and colleague, Mr. C. G. Wheelhouse, used to impress this upon us time after time and on the ground of such deficiencies to lament the abolition of apprenticeship. Mr. M. A. Wardle, of Bishop Auckland, has temperately and persuasively expressed the same opinions.[3] For my own part, while I admit how much the young diplomé or graduate has to learn in the way of little adroitnesses and tact in the management of private patients, in the conduct of trivial but vexatious disorders which do not find their way into hospitals, in dispensing medicines, and so forth, yet surely to revive the bond of apprenticeship for these comparatively minor accomplishments is to burn a house for roast pig. Manual dexterity, it is true, can only be gained in early life but this would come with the earlier application to anatomy which I advocate. The apprentice did not always get the best of most conscientious of masters; in any case he was liable to be infected and too often was infected, at a critical time of his life, with an incurable empiricism and became habituated to a narrow routine. A convenient and elastic routine and a wise and discriminating empiricism are good, but these resources should not be the beginning of wisdom; after the scientific habit of mind is established these can be added to it, and I agree that six months' occupation with an able and intelligent family physician would prove an invaluable finish to hospital instruction. But I think that such residence should be with masters recognised for their special fitness by the General Medical Council.

Graduate or advanced work, both in the fields of instruction and research, has received of late much of the attention which its great importance demands and I think the profession does not quite realise the debt we owe to Mr. Jonathan Hutchinson for his enthusiastic and indefatigable exertions in the development of such advantages for qualified practitioners who have still much to learn, a class coextensive with the whole of us. We ought not to be satisfied until such advanced studies are so organised as to lead up to a university degree, though it follows from what I have said before that in this case they must include some subjects, such as history, philosophy, or literature, to enlarge and enrich the mind beyond the scope of medicine, and indeed beyond the wider but far from catholic dominion of science itself.

### THE EXAMINATION QUESTION: THE ONE PORTAL SYSTEM.

The undergraduates who are listening to me will expect me to touch at least upon the distressing subject of examinations. It has been inferred no doubt from what I have already said that, like every disinterested observer of medical education, I am in favour of that "one portal" which is established in virtually all the other nations of Western Europe and the advent of which is certain in our own, though after the way of Englishmen we shall waste valuable time in trying to apprehend an idea not materialised in custom. To all persons thus qualified the appellation of "doctor" has so long been granted by English custom that official recognition of this title can hardly be withheld; moreover, the Conjoint qualification should carry with it the Membership, not of one only, but of both the Colleges. The multiplication of modern universities in England—one of the most inspiriting features of our day—must compel the institution of one portal; the steam roller of the General Medical Council cannot even pretend to equalise so multiform a system. In my university I find that the one portal is virtually in force, for from 70 to 80 per cent. of our men take the diploma of the colleges before presenting themselves for our more advanced graduation. Sometimes I say to them, "Get qualified and then we can proceed with your education." But as this proceeding of theirs is not universal or compulsory we do not derive the benefit of it; still are we obliged to load our examinations with tests of the memory, sharpness, and fluency of our candidates which indeed tend rather to stifle real study, or at any rate testify in no direct way to the broader training and enlarged capacities which are particularly our concern. For qualification I regard the Conjoint examination as excellent; the examination of a university, however, ought to have a somewhat different aim and method from a test of conventional equipment and efficiency; it ought to be much less inquisitive and exacting, much more of a leisurely, continuous, and individual appreciation. We want to move away from tests of results without methods, of practical habits which stand still while knowledge is progressing, of bookish acquirements without experience, of seedlings on stony ground which have no root in themselves and so endure but for a time; to move away from the reproduction of other men's notions, and towards the recognition of a critical and flexible judgment, and a habit of looking problems fully and intelligently in the face. For these qualities it is that a university degree is to be conferred; and to this end it is that in Cambridge—I believe with the loyal consent of all our medical graduates—we retain and attach a cardinal importance to our theses for M.B. In the thesis for M.B. the student—too often for the first time—realises that he, too, can grapple with the interpretation of things, that he has got beyond the stage of beseeching his coach "to tell him how to answer but not for heaven's sake to explain the reasons of the answer."

Yet in addressing a university, as virtually I do to-day, I

[2] In place of formal examination in chemistry for a diploma I am disposed to prefer—at any rate in part—the submission of laboratory books, initialled weekly or monthly by a university demonstrator.

[3] Brit. Med. Jour., Sept. 27th, 1902.

cannot forbear to warn my brother professors that even the blessed word "research" does not deliver us from the bondage of formula and routine. Much that goes to-day by this name is mechanical routine of a more deadening effect in that it is a *corruptio optimi*. The mere plotting of curves, the mere watching of levers or thermometers, the mere piling up of undigested or over-elaborated statistics is clerk's work which may provide material for a professor but—as we may read in the bulk of published theses—do not develop, perhaps scarcely stimulate, that germ of originality in which every normal man varies from his kind. The clinical teaching of the hospitals is so much improved of late years that on this subject I have little advice to give either to teacher or to student. But there is still too much trooping after eminent teachers, too little quiet study of the patient. Reading of text-books at home is eating sawdust; I counsel you to carry your treatise into the wards, moving from bed to bed as you read; thus you will get living knowledge which will make you into another man. The close neighbourhood of the clinical laboratory whereby disease is studied in its dynamic aspects, from rudimentary beginnings to perilous storm or even to wreck, will teach you a lesson which the lay managers of a hospital apprehend with difficulty, and never learn, that Medicine is not a Summa or Corpus of fixed axioms or principles, better or worse applied by this physician or that, nor again consists in "surgery and placebos," but is a living and progressive organ, only to be kept vigorous by incessant growth and renewal. And is not this living medicine educating not us only but also the butcher and the milkman, the family and the town council, nay, the State itself and its rulers, shaming the complacencies of the unidea'd and dissolving the formulas of the "practical man"? For clinical medicine has always been not only itself a sphere of scientific discovery but also the cause of discovery in other spheres. Over and over again clinical medicine has led the way for the physiologist as well as for the pathologist and day by day has demonstrated an interlocking of processes and sequences of events which no experimental work could compass, even if such combinations could be foreseen. Every hospital, large or small, if its work is to thrive and its patients are to reap the benefit, should be open to students. In teaching his pupils the teacher educates himself—reveals to himself his own latent capacities. Thus not only should the London hospitals enter into a union of free interchange of students but all country hospitals also should be gathered into the system. I often urge our own men to escape for a few weeks from the hustle of a great metropolitan hospital into the quiet wards of a county institution where a few cases can be thoughtfully considered, and not rarely shrewdly interpreted by an efficient and unassuming physician or surgeon of the staff who is glad of an intelligent hearer.

### THE OUTLOOK OF MODERN MEDICINE.

Never was there a time when the study of medicine offered such visions of reward—social, scientific, and beneficent—as at present. From these manifold visions it is bewildering even to choose a few illustrative glimpses. A recent address by Sir John Burdon Sanderson revealed to us the wider significance of oxidation in the animal body. Each in his own direction, physiologists, such as Langley and Sherrington, have traced the intricacies and yet the integration of parts and functions; while others, such as Starling and Bayliss, have pursued the wonderful functions and reciprocities of internal secretions. Allied to these are the specific products of cells, every cell of the body a microbe with its own juice—its toxin, if you will—all playing against each in mutual attractions and repulsions, and not with each other only but in marvellous fore-ordination with extrinsic agents capable of entering into relation with this or that specific tissue or cell, for good or evil, and, if we can but tame them to our uses, potent for therapeutical ends. We are shown how digestion is but one phase of these equivocal processes—food or poison as circumstances may determine; and, by Croft Hill, how a ferment in one phase undoing molecules, in another is no less efficient in constructing them. The busy, curious spirit of modern physiology is not arrested even before the riddle of the albuminous molecules, probably a finite series; and is reading them, as Ehrlich, Fischer, and Hopkins are doing, by analysis or synthesis; and reading not their own constitution only but, as Pavy also is discovering, their relation to the molecules of carbohydrate and fat. How, again, with the disappearance of foolish mediæval schisms of the practice of our profession the influence of workers in all branches will reinforce each other, is remarkably illustrated by the light thrown upon some of the gravest problems of general disease in the sessions of the new Dental Section of the British Medical Association. Dietetics again, which had made some indefinite advance by the empirical observations of the physician, has been raised nearer to the rank of a scientific study by the investigations of food values by Chittenden and Atwater, and of the purin bodies by Fischer, Walker Hall, and others. And if these brilliant prospects are opened out to the private physician how far more dazzling are the promises of preventive and public medicine. By the hands of Koch, Manson, Ross, Bruce, Leishman, and their peers plague-swept areas of the world are being restored to culture and civilisation; by the work of Nuttall and Haldane and many others, as chronicled in the *Journal of Hygiene*, the standard of health is raised, dangerous occupations are made wholesome; and the conditions of childlife and education are being moulded for infinite good, by the physician who thus, from the private duties and modest social ambitions of a healer of the ailing individual, is rising to the functions and dignity of the statesman. Could I but touch, as hitherto I have failed to do, the imagination of a rich man that he might see how much this progress would be accelerated if we could rise above our present anthropocentric medicine and establish a laboratory and professor of comparative medicine! For in disease, as in generation, all life is kin, and by a universal pathology our conception of these problems of the perversions of health would be infinitely enlarged and our knowledge of them increased, not for man only but for our herds, our fish, and the fruits of the earth. But no; the unimaginative Englishman is content to blunder along knowing little of the natural world about him and content to spend his money in charity to mitigate calamity and suffering which by more timely aid he might have prevented. "For knowledge," said Sir William Wharton shortly before he was taken from us, "money is hard to get until the necessity for its expenditure is patent to the smallest intelligence."

In all this cry about learning you may ask me, Where is the wool? Where does action come in? Now, if I am earnest with you for learning I would be even more robust with you for action. Revolve, agitate, test continually the stuff of your knowledge till you have to act; then ponder no more. If you have made a good machine of yourself you will act better by your acquired nature, by the instincts you have truly constructed, than by looking back for your learning. Whether as teacher or practitioner, come to a decision, and then stick to your course dogmatically and imperiously. To pretend to know more than we do is one thing; to be vague and indecisive in counsel or action is another. Vacillation spells failure. Doubt breeds diffidence. When tried by an anxious case do not keep turning it over and over again in your mind. To carry through a second best course is better than to falter in the best. To let a case hang about your mind while neither observing it nor reading it up, and especially to do this by night, throws the facts out of perspective and harasses you when your mind with a little rest would create a truer conception by itself. If you want more information, if events be not as expected, seek more light by book or bedside. If after all you are in doubt, go back formally to the beginning; examine the patient as if you had never seen him before, if possible with an intelligent medical friend. Some forgotten fact of the early history or sign of local change may thus come to light and bear significantly upon the subsequent events.

### MORAL AND MENTAL UNION.

We have dwelt upon education as progress from ignorance to knowledge, from feebleness to strength; but as we cannot regard intellect apart from imagination so we cannot separate the moral from the mental part of man. Either without its supplement is incomplete. None knows better than the physician that emotion, religious or other, must have a strong skeleton of intellectual principles; conscientiousness without enlightenment has to account for some of the darkest chapters of human history. At my time of life I feel that I may never again address so important a body of students as those of this great college, and if I must not thrust upon you thoughts of a kind which to-day we may scarcely be in the mood for, I cannot conclude without touching upon some graver matters of that higher life without which we can never prosper either as a nation or as

individuals. It was by what Sir Philip Sidney called "the ancient piety and integrity of the English people" rather than by far-seeing wisdom that this nation weathered the storms of the last two centuries. There are now many rich men among us and there has never been a time when in their monotonous amusements they have seemed—to us poor men—farther from the kingdom of heaven. But England will never dance to the pipe of Omar Khayyam nor take for its motto

> ..... sapias, vina liques, et spatio brevi
> Spem longam reseces.

If there be some ominous signs of corruption of moral habits, on the other hand we may see still more vividly the signs of a new ethical earnestness and insight as pure and intense as the awakening of Wesley and Newman and far more permanent in its elements. It is your great privilege to be born in a time of breaking up of dogma, of the deliverance of the spirit from the bondage of the letter, of the scrapping of the machinery of religion for the recovery of its essence and for a new embodiment of it. Such was the breaking up of ancient ritual by Christ himself, and, in their measure, by Wycliffe and Luther. Now in this our time we are set free to return not to the sixth century but to the first, to the original source of the Christian life. As to dogma, hear what all men say but follow no man; follow the light which you will find within you. In the growing purity of your hearts you will not fail of your revelation, and by this touchstone you will distinguish even in your contemplation of nature the true from the false, you will interpret that higher secret which by her eyes you see that she knows but cannot express, and will read into her message ideas which no analysis, scientific or even philosophic, can reveal. Remember, if you are ever bored with your own self there is something wrong with you. Physiology tells you that you must always be building or degenerate; no impure, petty, or rancorous thought but makes a mark not to be undone and weakens the habit of virtue. It has been said, and with some truth perhaps, that men of science are apt to forget we cannot play curiously with base and shameful things and then wipe them away as if we had never been occupied with them. Upon those physicians whose painful duty it may be to turn over psychological garbage rests the heavier responsibility of a jealous concern for the purity of their own hearts. Our decisive moments, as George Eliot says, are not those of our better hours, protected by wholesome happier dispositions, but when we have in us less devotion—for so we vary; when we give way to little insincerities, little uncharitablenesses, shiftinesses, low standards, tampering with worldly folk, little tempers, and jealousies. In the Phædrus we find the profound truth that if the soul be not destroyed by its own proper evil it cannot be destroyed by any other; a lesson there enforced by the figure that the soul is the charioteer of two winged horses, the one of noble the other of ignoble breed, and sooner or later it may be dragged to earth by the baseness of the ignoble steed and there lose its own wings also.

The opinion is current since the time of William Henry Green that spiritual goods are essentially non-competitive, that the survival of the fittest does not apply to the field of the highest ethics, which is a field rather of inward than of outward occupation. This has always seemed to me a shallow distinction; surely a race is set before us and we run all. Competition is, indeed, now rather between large social than between individual units, but the strongest bond of the parts of the social unit, that by which it survives, is surely the higher ethics. We can no more get out of nature's methods than out of our own skins. That progress comes by adversity has been told us by Christ and St. Paul, by Tauler and Herbert, as well as by Darwin and Haeckel. Tauler says: "If we were wise and industrious the devil's opposition and his discipline would be more useful to us than those of the good angels; for were there no conflict there could be no victory." A knowledge of the highest endowments, deeds, and creations of man must therefore form not only a part of universal education but also of our personal meditation, whether it be found in Greek, Latin, or Hebrew.

The physician is wont to learn how noble is his profession, how profound the debt of the public to him, and how devoted society is to his lofty calling, in after-dinner speeches. But it is true that our calling is gentle, unselfish, wise in its intimate converse with nature and mankind. "*Humanumque genus communi nomine fovit.*" We know with George Herbert, "it is some relief to a poor body to be heard with patience." Furthermore, it teaches us the secret of the "simple life," which for society too often means a clean slate on which to daub new excitements, for there is no *ennui* like the *ennui* of the man of pleasure. By the "realism" of its daily practice it hardens us against carnal temptations. It saves us from the withering sin of cynicism, for it inspires us with the building of a world ever better and better, a work in which we are the artificers, for if the world may not be very good we think it possible for us to make it so. No good physician was ever a misanthrope. Yet if all professions have their safeguards they have also their temptations, and our own is no exception. Laymen, even those most friendly to us, tell us of our testiness, of our jealousies, of an angularity in our relations with our brethren, especially with those who live near us and ought to be our colleagues, but whom we are too apt to call our "opponents" and so to regard as such. This, to say the least of it, is bad policy, it gives our enemies a handle against us and grieves even our friends who discern our fault but not our temptations. That members of other professions are free from this personal distrust comes of the different conditions of their engagements. Unfortunately the game of medicine is played with the cards under the table. Whether a clergyman be a good preacher or pastor, whether a barrister conducts a case well or ill, whether a tradesman sells good soap or bad, is not only a matter of which the public can form some fair judgment, but also these transactions are, so to speak, in market overt. In the intimacies of medical counsels, on the other hand, who is there to note the significant glance, the shrug, the hardly expressed innuendo of one or other of our brethren of whom it might be said, as it was said of Roderick Lopez—Queen Elizabeth's physician—that "he is none of the learnedest or expertest physicians, but one that maketh a great account of himself"? Thus we work not in the light of public opinion but in the secrecy of the chamber and perhaps the best of us are apt at times to forget the delicacies and sincerities which under these conditions are essential to harmony and honour. But the more careful we make ourselves of these loyalties the less we shall suspect others and the more candid and sincere we become with our brethren the less they will suspect us. Most of such offences are due not to malevolence but to want of imagination or good breeding. In any case let us always remember that as we have many benefits, so we must be vigilant and forbearing in the perils to which the temper of the physician is exposed. For such trial and unrest as we have, let us dwell on the words of Montaigne, that "we have the most sweet and gentle medicine in philosophy; for of others no man feels the pleasure of them but after his recovery, whereas she pleaseth, easeth, and cureth all at once."

It was said before Chaucer that the physician is no ritualist; in this audience I am addressing men of many creeds and some, perhaps, who fondly think they have none. At any rate, the physician learns to follow a true instinct in seeking the ideal not in dreams, emotions, or transcendencies but in the actual, in the high choice and promise of the real. No delicacy, or remoteness, or fantasy can make a false idea into a true one. Yet Professor Lloyd Morgan has well said, "the prime condition of progress is to believe more than can be demonstrated." In the rough and tumble of all callings, however, the higher life gets obscured and we have to seek quiet moments when we can enter into that inner chamber of the mind wherein dwells that self by which we differ from all other individuals, for which we are responsible, and yet wherein, by this difference, are—even those whose hearts are warmest—alone. To this end, whether I could or would go to church or not, I have always "differentiated" my Sundays. If I stay away from a place of worship the greater my responsibility, the more my duty to the higher life. Whether your "studie be on the Bible" or with Shakespeare is for each of you to choose—perhaps on both; but for that one day of the week be thankful to eschew idle books and newspapers, petty cares and business, and even professional usages which can be postponed, so that we may live one day at least in the presence of men greater and purer than ourselves. And what I say of one day in the week I say also of some minutes in every day; in that inner chamber store for the day some sweet verse, some line of gentle wisdom or lofty thought which—to repeat a phrase with which I began—shall still make the habit of virtue and reason easy and pleasant to us. Then when the new song is sung we may find ourselves among those who could learn that song, for they were redeemed from the earth.

# A Presidential Address
ON
# MEDICAL SCIENCE FORTY YEARS AGO: A RETROSPECT AND A FORECAST.

*Delivered before the Medical Society of London on Oct. 9th, 1905,*

BY SIR LAUDER BRUNTON, M.D., D.Sc. EDIN., LL.D. EDIN. AND ABERD., F.R.C.P. LOND., F.R.S.,
CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

GENTLEMEN,—The first duty I have to discharge on taking the chair here to-night is to thank you for the honour you have done me in electing me your President. The Medical Society of London is one of the oldest and most honoured of medical societies in this country and when I look at the long roll of illustrious men who have held the office of president I feel how great the honour is of having my name included in the number. I thank you gratefully for it and assure you that no effort shall be lacking on my part to maintain the dignity of the office.

My second duty is to say a few words to you in the form of a presidential address and I am glad to learn from the secretaries that it need not be a long one. This intimation is all the more agreeable to me because I have been obliged to write the address in mid-ocean on my way back from a visit with the British Association to South Africa and the falls of the Zambesi. Having no medical books I have been obliged to rely on memory and have had no opportunity of either supplying deficiencies or verifying references. I must therefore beg your indulgence if I have either made any grave omissions or inaccurate statements. It is almost exactly 39 years since I had to discharge a similar duty in taking the chair as senior president of the Royal Medical Society of Edinburgh, an old society founded in 1737 and incorporated by Royal Charter in 1778, but the active members of which consist almost entirely of medical students and young graduates. At the time of my election I had only been a graduate for a couple of months and I had just entered on my duties as resident physician to the clinical wards of the Royal Infirmary, as the great hospital of Edinburgh is called. Having no experience to look back upon my address naturally took the form of a forecast and I selected for my subject Modern Methods of Research in Medicine. I lost or mislaid the manuscript of my address many years ago but I think I laid especial stress on methods of microscopical and chemical investigation, on the spectroscope, clinical thermometer, and sphygmograph.

To-day I shall try again to forecast the gains of medicine from recent methods of research, but before doing so I think it may be interesting to some of the younger members of this society if I give a brief sketch of the condition of medicine at the time of which I have just spoken. For the later "sixties" and early "seventies" of the nineteenth century were a period of wonderful progress and the alterations that have occurred within less than half a century are so great as to be wellnigh incomprehensible by those who have not witnessed them. At the time of which I speak (1866) we had no antisepsis. It is true that in Professor Syme's wards we used for dressings a solution of permanganate of potash which had been recommended to him by his son-in-law, Mr. Joseph Lister (now Lord Lister). Dr. Thomas Keith was performing ovariotomies with singular success, but this success was due to the jealousy or prejudices of other surgeons who would not allow him to have patients in the hospital and obliged him to operate in a private house, where he obtained brilliant results by the exercise of singular care and scrupulous cleanliness. Had he operated in hospital I feel sure that his results would have been very different and would have justified the dictum of one of the most distinguished of the hospital surgeons: "Ovariotomy is not surgery; it is murder, and any man who does it ought to be hanged." That a wound should heal without suppuration was a rare event and from time to time a thrill of horror would go through the hospital when it was whispered that pyæmia had appeared in one of the wards. For we knew only too well how likely it was to spread and we neither knew what it was nor how to combat its progress. When it prevailed the most trivial injuries might prove fatal, and I well remember the case of a workman who, in driving a nail, had smashed the last joint of his left thumb with a hammer so that the last phalanx had to be amputated. To-day the operation would probably be done in the surgery, the thumb would be treated antiseptically, and the patient would be sent home with the certainty of recovery. Then, alas, pyæmia was prevalent and the patient died. I have heard people speak of the folly of an antiseptic spray during operations but I do not think such people could have had any idea of the condition of operating theatres when the antiseptic method was introduced. Now floors, walls, ceilings, furniture, and apparatus are clean and pure, but in those days the dust which a sunbeam striking across the operating theatre would have revealed was certain to contain numerous germs which would cause a wound to go wrong if they settled upon it.

Nor was pyæmia the only infective disease which we had to dread. Typhus fever was then rife and I think that at one time we had about 120 cases in the hospital at once. At the time I gave my address one of my fellow residents in the hospital had just recovered from typhus fever and within the next year another of them just escaped with his life, and two more residents, as well as one of the visiting physicians, died from the disease. Yet I think it likely that many of the younger members of this society have never seen a case of typhus fever and the same is probably true of the present generation of medical students in Edinburgh. At the time of which I have been speaking there were several narrow and crowded lanes, or "closes" as they were termed, in which typhus fever was always present and from them it would every now and then spread to the neighbouring streets. But in the course of extending the University buildings the closes which formed the den of typhus fever were swept away and the disease disappeared along with them. Such an occurrence makes one think that perhaps the Great Fire of London, instead of being a great calamity, was a great blessing by clearing away infected houses and preventing a return of the plague.

Thirteen years before the date of my address Henle enunciated the doctrine that infectious diseases are due to a contagium vivum. In the year preceding it Davaine did his remarkable experiments on the nature and power of multiplication of the virus of anthrax and about the time it was delivered Villemin was showing phthisis to be inoculable and Chauveau and Burdon Sanderson were showing the virus of small-pox to be particulate. But we had then no definite knowledge of disease germs such as we now possess, the methods of cultivation and systematic inoculation were still in the future, aniline stains had not yet been introduced, and oil-immersion lenses, which have so greatly aided the study of disease germs, had not yet been made. Screw section-cutters had been in use in Professor Balfour's practical class of botany for several years and Mr. Stirling, Professor Goodsir's assistant, used this instrument in making preparations of animal tissues, but he kept his process more or less a secret and it was only described about five years afterwards by the late Professor Rutherford. It was then impossible to make sections of the nerve centres such as have now been made and which have thrown so much light on the course of nervous tracts in the brain and spinal cord. The only indication of cerebral localisation then known was the relationship which Broca had pointed out between lesions of the third left frontal convolution and aphasia. About three years afterwards, in the winter of 1869, my friend Professor Schmiedeberg arranged that I should go with him to see the experiments of Fritsch and Hitzig who had found that stimulation of the dog's brain near the crucial sulcus caused movements of the paws. For some reason or another, I forget what, the appointment was not kept. Their experiments went no farther and it was only in the spring of 1874 that my friend Dr. D. Ferrier, by an inspiration of genius, began to use monkeys whose brains correspond so much more closely to the human brain than do those of dogs. He was thus able to localise the functions of the brain both sensory and motor in a way which, although it has undergone supplementation and correction, is still in the main both correct and complete.

Nor was it only our knowledge of the pathology of infective diseases which was deficient. We could not ascertain and register as we now do the extent and course of the febrile condition. The use of the clinical thermometer had just been introduced into this country by the late Professor

Aitken of Netley and the clinical wards of the Royal Infirmary, being set apart specially for the instruction of University students, were provided with two of these thermometers. To the best of my knowledge these were the only two in Edinburgh, perhaps in Scotland. One was bent and the other was straight, both were between a foot and 18 inches long, and I used to walk proudly about the ward with them contained in something resembling an ordinary gun-case under my arm. But each observation required about ten minutes so that the number it was possible to make during a visit was very limited. The quickening and accuracy of action and the convenience in size produced by diminishing the bulb, adding an index, and shortening the stem have so fitted the thermometer for ready and rapid use that we have typical charts of the temperature of almost every acute disease given in our medical text-books, and the family medical man would probably feel more at ease without his stethoscope than without his clinical thermometer.

The spectroscope had shortly before been applied to the investigation of the blood and the changes produced in it by oxidation and reduction and by carbonic oxide, while my friend Professor Arthur Gamgee was engaged at that very time in studying the effect of nitrites. The hopes of great physiological, pathological, and pharmacological discoveries by the use of the spectroscope which then seemed reasonable have not yet been realised, but in other branches of science it has more than fulfilled all expectations, and it has not only given information regarding the chemical composition of this earth, of the sun, and of the stars, but it has afforded a basis for new views regarding the nature of the elements and supplies one of the best means of ascertaining the direction and rapidity of motion of the heavenly bodies. It seems, therefore, not improbable that new methods in the way of applying it to the study of the blood and tissues may increase its utility in this direction as much as the introduction of aniline stains increased the utility of the microscope in the investigation of disease germs.

Another instrument which I mentioned was the sphygmograph, with which, through the kindness of my friend, Professor Arthur Gamgee, I had become acquainted about a year before, which I had used constantly in examining the action of digitalis in myself and others, and which a few months afterwards enabled me to discover the condition of high tension present in a case of angina pectoris during the attack and thus enabled me to find a remedy. Marey's epoch-making book on the circulation had appeared about three years previously. In it he presented in a most clear and fascinating manner solutions of many problems connected with the heart and vessels, and with it began the scientific study of the circulation in man. But the problems which this subject presents are too complicated to be solved by simple observation and they must be simplified and the effect of the various factors which compose them ascertained by experiments on animals. Such experiments were largely used for the purpose both by Marey and Chauveau but the graphic method they employed, depending as it did on transmission of pressure by air, whilst giving accurate records of changes in pressure, was ill adapted for registering its actual amount. On the other hand, this was readily done by the kymographion of Ludwig, whose introduction of the graphic method into physiology has helped its progress so greatly as almost to render it a new science. Ludwig's kymographion, consisting, as you all know, of a rod swimming on a mercurial column and registering its movements on a revolving cylinder, was invented by him about 1846, but in 1866 there was not a single instrument of the sort in Great Britain and only in the following year Burdon Sanderson constructed one with which he made his experiments on the relation between respiration and circulation. The manufacture of this instrument by the aid of a tinplate worker who lived near the Middlesex Hospital marked an era in English physiology, for it was the beginning of the renaissance of physiological science in this country consequent on the general introduction of methods of research and the wide diffusion of practical instruction which were mainly due to Burdon Sanderson's exertions. Marey's book was written with wonderful clearness and was worked out so thoroughly from the mechanical side that a nervous system for coördinating the action of the heart and vessels seemed quite superfluous and one hardly noticed that the author rarely or never mentioned its existence. Ludwig, on the other hand, was deeply interested in the cardiac and vascular nervous systems and was just beginning the researches on them which have made the Leipsig school so famous. These researches were published in his "Arbeiten," the first volume of which appeared in 1867. In it he mentioned the discovery of the depressor nerve by himself and Cyon. When I first entered his laboratory in 1869, however, he had not completely formulated the relationship between blood pressure and pulse-rate, and even yet we do not know all the nervous factors which modify their relationship.

The application of new methods of experiment to the investigation of the action of drugs was just beginning. Traube had recently examined the action of digitalis on the circulation by means of Ludwig's kymographion and von Bezold had made his classic researches on the action of atropine. Indications of a relationship between chemical constitution and physiological action had been shown to exist by the experiments of B. W. Richardson, a former president of this society, on bodies of the aliphatic series, but Crum Brown and Fraser's remarkable discovery that by changing the chemical composition of strychnine its physiological action can be altered had not yet been given to the world and consequently none of the synthetic remedies existed which are now made in such numbers and owe their origin to that discovery.

The medicines at our disposal for the treatment of disease were few in comparison with those we now have, especially in those such as are useful in the treatment of sleeplessness and the relief of pain. For example, when one of my fellow residents had typhus fever we had no remedies to combat the distressing sleeplessness except opium combined, as the fever was high, with tartar emetic, for cannabis and hyoscyamus had proved inefficient, and I well remember the anxiety with which we watched to see whether a "new remedy" for sleeplessness—viz., bromide of potassium—would produce the desired effect. Now we have chloral, sulphonal, trional, veronal, paraldehyde, and many others, but, what is even more important in such a case, we can now ascertain the temperature exactly and we can reduce it either by cold sponging or antipyretics, or both, so as to give the soporifics a chance of acting in the way they ought to do.

We now recognise fully that a rise in temperature is not always a bad thing to be at once combated but is, on the contrary, one of nature's defences against invading microbes. But the defence may be overdone and lead to the destruction of the organism itself. One of the greatest gains in the modern treatment of febrile diseases is that we are learning when, how, and to what extent it is advisable to lower the temperature of the patient and when to leave it alone; indeed, we are now basing treatment again on a belief in the *vis medicatrix naturæ* just as our predecessors did a century ago. But there is this great difference between treatment then and now—viz., that they either left nature without help entirely or if they did meddle they muddled, whilst we are learning when and how to help nature without hindering her beneficial operations. If we review generally the progress of medicine within the last 40 years we may say that it has been chiefly in the direction (1) of discovering the part played by microbes, especially those belonging to the vegetable world, in the causation of disease; (2) of ascertaining the exact action of drugs; and (3) of making synthetic remedies. If we try to forecast its progress in the next 40 years it seems likely that further advances will be made in these three directions and in addition (4) our knowledge of animal microbes such as those which cause elephantiasis and sleeping sickness will be extended; (5) we shall learn much more about the modes of infection; (6) we shall do a great deal more to prevent infection; and (7) we shall direct our attention more than at present to increasing the health of the organism and thus enabling it to resist disease arising either from infective microbes or disordered metabolic processes. Perhaps to these we may add yet another direction—viz., (8) increased power to discover disease germs, to treat disease, and to alter metabolism by means of new developments of electricity and forms of radio-activity. To sum up shortly, in the last half century research has been directed chiefly to the nature of invading microbes; in the next it will deal with the methods of increasing resistance. In spite of all the discoveries already made in regard to disease germs we are still ignorant of the nature of the virus of small-pox, measles, and scarlet fever in man, of horse-sickness, of catarrhal fever in sheep, of rinderpest in cattle, of heart water both in sheep and cattle, and of rabies both in man and beast. But within the last few years some great discoveries have been made which open out

a new field for research regarding the causation of disease by minute animals—viz., the discovery of one protozoon as the germ of malaria, of another as that of Texas fever, of a third as that of nagana or the tsetse fly disease, and of another as the cause of sleeping sickness. Another most remarkable discovery is that elephantiasis is due to the disease of a disease germ[1] and I was much struck lately by the remark of a medical man with whom I was staying in South Africa, that some years hence the study of the diseases of disease-germs might be one of the most profitable fields of research. Carriers of infection formerly unknown have been discovered and their discovery is even now leading to the limitation or suppression of several diseases. Malaria, which is the greatest scourge of tropical countries, is now known to be chiefly, perhaps entirely, conveyed by mosquitoes and measures adapted to destroy mosquitoes and prevent their attacks have rendered districts habitable or even healthy which previously were speedily fatal to any persons who attempted to live in them. East Coast fever, Texas fever, biliary fever, and malignant jaundice, diseases which are extremely fatal to domestic animals in South Africa, have all been shown to be caused by inoculation with protozoa by the bites of ticks, and the destruction of the ticks by arsenical solutions bids fair to lessen the spread of these diseases. Nagana or the tsetse fly disease, so destructive to horses and cattle, is due to the inoculation of a worm-like protozoon by a biting fly which conveys it to domestic animals from antelopes, in whose blood it appears to be constantly present without doing them any injury. When the antelopes are destroyed the disease vanishes just as typhus fever did in Edinburgh when the infected houses were cleared away. Sleeping sickness, which is now extending so much as to threaten Africa from the Cape to Cairo, depends on a similar microbe, inoculated by a fly resembling to the tsetse, but we do not yet know either how to destroy the flies or to render the reservoirs of infection corresponding to the antelopes in the other disease free from infection. For in this case these reservoirs are not animals but persons already infected and what we must hope to find is some way of destroying the fly or of discovering some drug which will act on the infecting protozoon in the same manner as quinine does on malaria. One of the chief difficulties in discovering the cause of tsetse-fly disease lay in the fact that the antelopes which acted as a reservoir of infection were not themselves ill and one of the reasons why one of the cattle fevers is so readily spread is that animals may seem healthy for some time and travel far after infection. It is not long since we learned that the disease germs of diphtheria may be present in the pharynx and those of enteric fever in the urine of patients for weeks after they are apparently well, and that persons apparently well or at most suffering from a slight sore-throat may communicate diphtheria to others, sometimes in a virulent form, and that Malta fever may be conveyed by the milk of apparently healthy goats. A knowledge of these facts would enable us to lessen or to prevent the spread of these diseases if such knowledge were practically applied. But perhaps it is too much to hope that such an application will be made, at least to such diseases as only affect the life of man and do not touch his pocket. Rabies does not exist in Australia and the most stringent quarantine is enforced because if the disease were to affect the huge flocks of sheep in that country an immense pecuniary loss would result. But in this country rabies has only been stamped out with great difficulty because many people either could not or would not see the necessity for a muzzling order which would eradicate the disease. Thorough vaccination is such an efficient preventive of small-pox that it insures almost certain immunity from infection, however virulent the type may be, and yet how many people refuse or neglect to have it performed. Pulmonary tuberculosis is the worst disease in this country, not only because of the numbers it carries off but because it seems to select as its victims those who can least be spared—the fairest, the ablest, and the best. We know its cause, we know the modes in which it is communicated, we know how its spread can be prevented, and yet the measures taken to prevent it are of such a half-hearted kind that no one can tell how long its ravages may continue, although if preventive measures were thoroughly carried out it would in less than 20 years be as rare among us as leprosy is now.

We are still in the dark as to the pathology of cancer, a disease which though claiming fewer victims is even more dreaded than pulmonary tuberculosis. Certain phenomena connected with its incidence seem to point to an infective origin but as yet no disease germ, either vegetable or animal, has been found to be its cause. The most recent researches rather point to its being dependent on certain cells assuming a form of nutrition and growth natural to cells in the generative organs but abnormal in other parts of the body. Usually the changes which occur in an ovum and lead to its growth and development are initiated by the entrance of a spermatozoon or spermatozoid, but it has recently been found that the eggs of a sea urchin will develop without impregnation provided an extra stimulus be applied to them in a form of a strong solution of common salt. Questions likely to engage attention in the near future are (1) whether similar changes can be initiated by chemical stimuli in other cells; and (2) how far increased cell growth caused by either mechanical or chemical stimuli can be modified in nature as well as extent. Experiments on fungi and algæ have already shown that more food and more favourable conditions tend to cause asexual development, while less food and bad conditions tend to cause sexual development, a condition which, as I have already said, appears to exist in cancer cells. The thickening of the epidermis on the palm of the hand which occurs after manual labour shows how readily cell growth is stimulated by mechanical means and the rapid growth which occurs in young cretins after the administration of thyroid extract shows how powerful is the action of certain chemicals. On the life and growth of cells depend the life and health of the organism which they compose and on our knowledge of the laws which govern cell life will depend our power to prevent or to cure disease and to prolong life. We are beginning to know a little about the ferments by which cells carry on their own nutrition and influence that of others, of the effect of the waste products and toxins they form, and of the means by which their production may be lessened or they may be removed or antagonised. But much still remains to be done, especially in the way of recognising morbid changes in the organism in their early, or so-called "functional," conditions before they have resulted in those gross alterations to which we give the name of "structural." Especially may we hope that with increased knowledge of cell life we may be able by diet, drugs, and regimen so to influence the cells of the heart and vessels that they will continue to retain their healthy condition for a much longer time than they do at present. Thus life will not only be much extended beyond the present limit but the tissues being under favourable conditions of nutrition their cells will not tend to undergo abnormal sexual development and give rise to malignant growths which are at present amongst the accompaniments and terrors of increasing age. The treatment of cancer by radium emanations appears to hold out some hopes of success, but further observations are required in order to prove whether these hopes are well founded or not.

[1] Vide Clifford Allbutt's System of Medicine, vol. ii., p. 1083.

## ANEURYSM OF THE ABDOMINAL AORTA.[1]

BY WILLIAM OSLER, M.D., F.R.S.,
REGIUS PROFESSOR OF MEDICINE AT THE UNIVERSITY OF OXFORD.

ANEURYSM of the abdominal aorta is very often diagnosed when not present, and when present the symptoms may be so obscure that the nature of the trouble is overlooked. I propose in this paper to speak of some aspects of our experience at the Johns Hopkins Hospital during the past 16 years, particularly with reference to the large abdominal tumour caused by the ruptured aneurysm. I have put in tabular form the cases, 16 in number, with the chief features. I have no intention of speaking of the history of the condition but I cannot refrain from two references. Vesalius was not only the first to recognise an aneurysm of the thoracic aorta during life but to him also we owe the first clinical description of aneurysm of the abdominal aorta. In the letter to Gasser acknowledging the receipt of the post-mortem report of a case of aneurysm of the thoracic aorta, which he had recognised two years before, he refers to an abdominal aneurysm in a woman who had had for many years a pulsating tumour below the stomach.[2] It is quite possible that this may have been only a throbbing aorta but

[1] A paper read before the Medico-Chirurgical Society of Montreal.
[2] Roth's Vesalius.

TABLE OF CASES OF ANEURYSM OF THE ABDOMINAL AORTA AT THE JOHNS HOPKINS HOSPITAL, BALTIMORE, U.S.A.

| No. | Sex. | Age (years). | Syphilis. | Alcohol. | Hard work. | Chief symptoms. | Physical signs. | Operation. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | M. | 69 | No. | No. | Yes. | Pain, nausea, and vomiting. | Tumour; thrill; no murmur. | Exploratory laparotomy. | Tumour had lasted 3 years; remarkable mobility. |
| 2 | F. | 36? | ? | ? | No. | Pain and emaciation. | Enormous non pulsatile tumour. | Exploratory aspiration. | Huge diffuse aneurysm. |
| 3 | M. | 33 | ? | No. | ,, | Pain; loss of weight. | Enormous pulsating tumour in flank. | Incision; attempt to compress abdominal aorta. | Death on the table; enormous diffuse aneurysm. |
| 4 | M. | 47 | Yes. | Yes. | Yes. | Pain of extraordinary persistency and violence. | Pulsation in back; thrill; systolic murmur. | — | Duration 3½ years. |
| 5 | M. | 27 | ,, | ,, | No. | Pain. | Tumour; thrill; systolic and diastolic murmurs. | Wiring and electrolysis. | Death in 48 hours; rupture through the diaphragm. |
| 6 | M. | 36 | ,, | ,, | ,, | ,, | Tumour; systolic murmur; pulsation behind. | — | — |
| 7 | M. | 68 | ,, | ,, | Yes. | No symptoms. | Large tumour; systolic murmur. | — | — |
| 8 | M. | 36 | ,, | ,, | No. | Great pain. | Tumour; systolic bruit. | Wiring and electrolysis. | Death on ninth day; rupture into peritoneum. |
| 9 | F. | 33 | ? | ? | Yes. | Pain. | Large tumour; systolic and diastolic bruits. | — | — |
| 10 | M. | 53 | Yes. | No. | No. | No pain. | Large tumour; systolic and diastolic murmurs. | Wiring and electrolysis. | Discharged in 4 weeks. No change. |
| 11 | M. | 38 | ,, | Yes. | ,, | Pains. | Heaving tumour; systolic bruit. | ,, | Death on fourteenth day; rupture of sac. |
| 12 | M. | 43 | No. | ,, | ,, | Pain. | Tumour; thrill; systolic murmur. | ,, | Pulsation much diminished; discharged in 4 weeks; no subsequent note. |
| 13 | M. | 30 | Yes. | No. | ,, | Pain; vomiting. | Tumour; thrill; systolic murmur. | ,, | Great improvement; lived 3½ years. |
| 14 | M. | 31 | ,, | Yes. | Yes. | No abdominal symptoms. | — | — | Dissecting aneurysm of entire abdominal aorta. |
| 15 | M. | 54 | No. | ,, | ,, | Latent. | Death from pneumonia. | — | Aneurysm (sacculated) of abdominal aorta; found post mortem. |
| 16 | M. | 49 | ,, | ,, | ,, | Pain. | Large pulsating tumour; rupture. | Wiring and electrolysis. | Rupture; diffuse aneurysm; death 6 months later. |

it is evident that Vesalius had had his attention strongly directed to this disease, as he tells Gasser in the same letter that he had seen six cases of aneurysm since his consultation with him in Augsburg. 152 years later (1719) Valisneri (whose name is linked with the plant known to all young students of biology) made the diagnosis of aneurysm of the abdominal aorta in the case of a carman at Padua, aged about 30 years, who had had syphilis and over whose abdomen a wheel had passed. For eight months he was in bed with severe pains in the loins and back and after having been seen by several physicians Valisneri detected a pulsation and diagnosed aneurysm. The part afterwards swelled and the tumefaction extended and even raised the contiguous ribs. An unskilful surgeon opened the tumour; a copious effusion of blood followed and the man died in a quarter of an hour. Morgagni was present at the examination, when an aneurysm was found extending from the diaphragm to the pelvis, the organs were displaced to the right, and even the left kidney was situated in the umbilical region. The sac contained a large quantity of lamellated concretions at the periphery and grumous blood in the centre. The ribs and the spine were eroded, the transverse processes and the bodies were nearly destroyed, whilst the thick intervertebral cartilages were all in their natural position, prominent and untouched by disease and beautifully whole. Here we have for the first time, I believe, a careful observation of the fact that the intervertebral discs resist the power of erosion—yielding, they do not feel the pressure.[3] The case is of exceptional interest in connexion with some of those which I here report in which the diagnosis of tumour was made.

*Incidence.*—These 16 cases occurred among about 18,000 admissions to my wards. The ratio of abdominal to thoracic aneurysm was about 1 in 10. The incidence varies in different localities. In Vienna, in 19,300 necropsies there were only three cases among 222 cases of aneurysm (Schrötter). Of 468 cases of aneurysm at St. Bartholomew's Hospital, there were 23 of the abdominal aorta, 1 in 20 (Oswald Browne). J. H. Bryant's recent paper gives the Guy's Hospital figures for the years 1854–1900 inclusive as: 18,678 necropsies, 325 cases of aneurysm of the aorta, of which 54 were of the abdominal part of the vessel—16 per cent.[4] Among the first 2200 necropsies at the Johns Hopkins Hospital there were 49 cases of aneurysm of the thoracic and 11 of the abdominal aorta.

*Etiology.*—Of the 16 cases, 14 were males and two were females. All statistics indicate the infrequency of the disease in women, a point to be borne in mind in diagnosis as the throbbing aorta is much more common in them. Nine of the patients were under 40 years of age. In three the disease had started before the thirtieth year. In two of Bryant's series the disease began before the twentieth year and 63 per cent. of the patients were under 40 years of age. Only seven of the patients had been very heavy workers. A definite history of syphilis was obtained in nine; in four others it was doubtful. Ten of the patients were alcoholics. Into the relationship of aneurysm to syphilis I cannot enter here. I believe it to be the all-important cause in persons under 40 years of age, and the more carefully we inquire into the history the larger the percentage of luetic cases. In 12 the aneurysm was saccular, in three rupture had occurred with the formation of a diffuse aneurysm, and one case was of the dissecting variety.

*Symptoms.*—In two patients the condition was latent and was found post mortem. Pain of a persistent, often of an agonising, character was present in 13 of the cases. It is usually the first indication of the trouble and throughout remains *the* feature, reaching an intensity not met with in any other disease. Five of the patients were taking large doses of morphine before admission. Associated with pressure upon, or stretching of, the nerves it is of a constant, dull, boring character, varied in some cases with paroxysms of frightful severity. Erosion of the vertebræ is usually associated with intense pain, but not always, as there may be extensive destruction without much pain but as a rule there is severe aching, boring pain which, when the nerve roots are involved, may radiate in their course. And lastly,

[3] Morgagni: Section on Diseases of Aorta and other Vessels (Case 17).

[4] Clinical Journal, 1903.

the pain may be due to rupture of the sac and the passage of the blood into the retroperitoneal and muscular tissue. It may simulate the pain of gall-stones, of renal colic, or of appendicitis and pressure on the nerves may cause pain in the testicles and in the course of the anterior crural or sciatic nerves. The recumbent posture may be impossible during the paroxysms. Pressure usually gives slight relief. Stokes, whose description of aneurysm of the abdominal aorta remains unrivalled, recognised the remarkable characters of the pain—the dull, boring, steady form and the awful paroxysms. Beatty's classical case, which he quotes in full, first called the attention of physicians to these special features of the disease. It is interesting to note that Andral regarded Beatty's case as a rare form of intestinal neurosis.

Nausea and vomiting were early and severe symptoms in two cases. Hæmatemesis did not occur in any cases of the series. Constipation was a common feature. Intermittent claudication occurred in one case. Altogether, apart from pain and the features associated with rupture of the sac, there were not many symptoms and the patients were usually well nourished and healthy-looking. Hæmorrhage from the bowels occurred in Case 16 after operation. As the patient lived for six months, and as the necropsy showed, it could not come from erosion of the bowel. I have reported one case—a patient under the care of Dr. Palmer Howard—in which, in a robust, strong man who had had intense backache, death occurred suddenly from rupture into the duodenum. Pressure on this part may lead to great dilatation of the stomach. I saw with Dr. F. J. Shepherd an elderly lady with great distension of the abdomen, dilatation of the stomach, with severe pain and anæmia. The necropsy showed an enormously dilated stomach due to pressure of an aneurysm on the duodenum. While revising this paper Professor James Ritchie showed me an aneurysm of the aorta just as it passed through the diaphragm which had compressed the cardiac end of the stomach causing great dilatation of the œsophagus.

*Diagnosis.*—The obscurity of the symptoms in aneurysm of the abdominal aorta has been recognised by all observers. It is well illustrated in the Guy's Hospital statistics. "A correct conclusion during life as to the nature of the disease was arrived at in 18 only out of the 54 cases on which this lecture is based, an analysis showing that an abdominal tumour was detected in 31, pulsation in 35, expansile pulsation in eight only, and a systolic murmur in 26. Incorrect diagnoses of a variety of diseases were made, including malignant tumours lying in front of the aorta, renal calculus, lead colic, spinal caries, sarcoma of the kidney, nephritis, perinephritis, pneumothorax, pleuritic effusion, epithelioma of the œsophagus, malingering, chronic intestinal obstruction, &c."[5]

As pulsation or throbbing, evident to the eye of the observer, or felt by the patient, is the most obvious feature of the disease, it will be well to consider briefly in what circumstances pulsation occurs in the abdomen. Normally, as one looks at the abdomen of a person in the recumbent posture, pulsation is visible between the ensiform cartilage and the navel. It may be slight, even absent, but in a majority of individuals it is present and in spare subjects in two special areas, an upper, at the ensiform cartilage or in the right costo-xiphoid angle, and a lower, just above and a little to the left of the navel. These may be separated by an area in which no pulsation is visible but they are often continuous. In favourable subjects one can see that the upper pulsation precedes the lower by an appreciable period of time. After running 100 yards quickly the chief impulse is at the ensiform cartilage, representing the throbbing of the dilated right chambers which are close to it. In over-distension of these chambers, particularly in the hypertrophy and dilatation of valvular disease, the beating in what we call the pit of the stomach is very evident and may be associated with a subjective sensation very distressing to the patient. The actual impulse itself is rarely cardiac but is due to the pushing down and out of the left lobe of the liver.

Sometimes the pulsation is actually cardiac, due to the protrusion of the abdominal wall by the right ventricle. This may occur in great dilatation, as Morgagni observed.[6] The diaphragm may be pushed down and at each impulse of the heart the ensiform cartilage and the skin below it are pushed out so forcibly that the condition is mistaken for aneurysm of the upper abdominal aorta. I have seen in disease of the mitral valve the dilated right ventricle cause a large pulsating tumour below the ensiform cartilage. In one patient at Mount Sinai Hospital, seen with one of the house physicians, a woman with mitral stenosis and enormous hypertrophy and dilatation of the right heart, the question was raised as to the existence of an aneurysm of the heart. In another instance in a boy, aged five years, seen on April 18th, 1895, with an extreme degree of mitral disease and great hypertrophy of the heart, the note is worth quoting: "Apex beat is in sixth and seventh interspaces, forcible, widespread, and extends laterally to the mid-axillary line. The præcordial bulging is marked, and below the left costal margin, projecting for 4 cm. and occupying *the whole of the left quadrant of the epigastric region*, is a prominent heaving, pulsating projection of remarkable dimensions. During coughing it becomes very much larger. In this there is a very loud systolic murmur and a rumbling murmur in diastole." It was perfectly evident that this projecting tumour was only part of an enormously distended right ventricle, not an aneurysmal tumour, as the impulse was synchronous with the apex beat and was directly continuous with the wide-spread throbbing of the heart. The cardiac epigastric tumour may be central and of a remarkable prominence. The beating of the aorta is most evident when the vessel becomes more exposed in the lower half of the epigastric and in the upper umbilical areas. In well-nourished persons the pulsation is slight and the vessel cannot be easily felt. In enteroptosis and great emaciation the vessel may be rolled under the finger as a distinct tube, feeling of about the size of the index finger, and may even be readily grasped. In rare instances the vessel is seen; even the bifurcation may be visible. In a patient with extreme anorexia nervosa the vessel with its bifurcation showed in a photograph.

Abnormal aortic pulsation is met with under the following conditions. First, in neurotic and hysterical states, chiefly in women. I suppose there is no young physician who has not diagnosed as aneurysm of the aorta the preternatural pulsation of the vessel, as Allan Burns calls it. In any suspected case it is well to be sceptical, particularly in women, in whom aneurysm is excessively rare. The subjects of this remarkable pulsation are usually neurotic, sometimes definitely hysterical. They complain of pain in the back and at the occiput and have the usual symptoms of nervous exhaustion and debility, but the special feature upon which all their feelings centre is the throbbing in the abdomen, which may be so severe as to interfere with their sleeping or even with the taking of food. In extreme cases there are pain, shortness of breath, and even remarkable attacks of hæmatemesis. It is stated that Hippocrates had noticed this pulsation, but to Morgagni we owe the first accurate description. Allan Burns[7] gives a very careful account of the condition and quotes from Albers, of Bremen, a remarkable instance in which, associated with the throbbing, there was passage of dark blood in the stools. The association of small hæmorrhages from the stomach and intestines has been described by Sidney Phillips[8] but I have seen no reported case more remarkable than that of Albers. The girl was excessively neurotic, had fainting fits, great palpitation in the abdomen, and an astonishing degree of violent pulsation. She had passage of blood from the bowels and the diagnosis of aneurysm was made, but a Dr. Weinhalt, who was called in, said he doubted if the pulsations proceeded from aneurysm as he had read of similar cases in Morgagni. The points to be borne in mind in these cases are: (1) That the pulsation occurs in nervous or hysterical women or in neurotic or hypochondriacal males. In mild forms it is common. (2) The subjective sensations may be pronounced—pain, abdominal distress, nausea, sickness, constipation, and, in some instances, the vomiting of small quantities of blood and the passage of blood in the stools. (3) The degree of visible and palpable pulsation may be extreme. The abdominal aorta is easily palpable and may be grasped in the fingers. It is sometimes tender. No definite tumour is felt. With much anæmia a thrill may be present. A soft systolic bruit may be heard, even without any pressure of the stethoscope. A mistake is not likely to occur if it is remembered that no pulsation, however forcible, no thrill,

[5] Bryant: Clinical Journal, 1903.
[6] Seventeenth letter, twenty-eighth article.
[7] Observations on Diseases of the Heart, &c., 1809.
[8] Brit. Med. Jour., 1887, vol. ii.

however intense, no bruit, however loud—singly or together—justify the diagnosis of an aneurysm of the abdominal aorta, *only the presence of a palpable, expansile tumour.*

Secondly, preternatural pulsation in the upper portion of the abdomen may be associated with tumours. In cancer of the stomach it is quite common to see a diffuse impulse in the left half of the epigastric or in the upper quadrant of the umbilical region. In the large, flat carcinoma of the stomach the impulse may be very forcible, but it is not expansile, and there is rarely any difficulty in determining that it is not aneurysmal. Cysts and solid tumours of the pancreas, cysts and tumours of the mesentery, and solid tumours of the retroperitoneal glands may be associated with a widespread impulse in the upper part of the abdomen. The greatest difficulty is encountered in comparatively small tumours directly over the course of the vessel, as in thin persons the throbbing may be so pronounced that, with a thrill and bruit, often present, the resemblance to aneurysm may be very close. As Allan Burns remarks, a tumour placed over the course of an artery and attached to it pulsates more strongly than the vessel itself. It can usually be noted in thin subjects that there is no actual expansile pulsation in the tumour itself.

Thirdly, in anæmia. In extreme anæmia there is throbbing of the arteries, both visible and palpable, and the pulse may even have the Corrigan or "water-hammer" quality. The most extreme throbbing may be seen and felt in the abdominal aorta, and it is not infrequently a source of great distress to the patient. The impulse may be bounding, striking the hand with extraordinary force, and when associated with a thrill and a bruit it may suggest aneurysm very strongly. I have reported a case in point.[9] On June 13th, 1885, I saw with Dr. Whiteside a large, stout man, aged 45 years, who had had for some months dyspepsia and pains in the abdomen of exceptional severity. He was anæmic and sweating and looked as though he had had a hæmorrhage. The large and fat abdomen throbbed in a most extraordinary way. The maximum impulse was a little below the ensiform cartilage, but from this point a large wave of pulsation passed over the whole abdomen. The shock was communicated to the patient's body and one could see the jar in the head and in the feet. Standing against the foot of the bed I could feel distinctly the impulse jarring the entire bed. On palpation the throbbing was violent with each systole, but it was trifling in comparison with the extent of visible pulsation. There was no expansile movement. No tumour could be felt. A systolic murmur was audible. That evening shortly after my visit the cause of the sudden anæmia became evident, as he passed a large amount of blood by the bowel and vomited blood. In the morning and for the next three or four days he vomited and passed large quantities of blood per rectum. The necropsy showed a duodenal ulcer lying directly upon the pancreas and the aorta, with thickening about it. The aorta itself was perfectly normal.

Fourthly, as pointed out by Stokes, the aorta may throb so forcibly in aortic insufficiency that aneurysm is suspected. It is a good rule never to diagnose aneurysm of any part of the aorta in young persons, particularly if anæmic, with insufficient aortic valves. Pulsation of extraordinary force, thrill, and bruit may all be present in an abdominal aorta which, post mortem, shows neither dilatation nor disease.

In old men with thin abdominal walls a very sclerotic aorta may suggest aneurysm. Among other causes of abdominal pulsation may be mentioned regurgitation of blood along the inferior vena cava. Allan Burns refers to a case of this kind, described by Senac, in which the vena cava was as large as the arm and the patient had a very violent pulsation in the epigastrium. I have not been able to find the original report.

In the diagnosis of aneurysm of the abdominal aorta perhaps the greatest difficulty arises when the sac has ruptured behind the peritoneum with the gradual formation of a large tumour, filling the upper part of the abdomen, or one or both flanks, and in which there may be little or no pulsation. While attention was called to this circumstance years ago by Stokes, that it warrants more careful consideration is shown by the frequency with which the condition is overlooked, and the extreme gravity of an operation upon what is supposed to be some form of new growth. Among the Guy's Hospital series Dr. J. H. Bryant gives cases in which the ruptured aneurysm was mistaken for renal calculus (owing to the agonising pain extending down in the left groin and to the testis), renal sarcoma (operated upon), cancer of the œsophagus, lead colic, and malignant disease of the liver.

There is perhaps no more tragic event in operative surgery than unwittingly to open an aneurysm. It has been done by past-masters of the craft. Pirogoff's comment on such a case has always appealed to me very strongly: "There are in everyone's practice moments in which his vision is holden so that even an experienced man cannot see what is nevertheless perfectly clear. At least, I have noticed this in my own case. An overweening self-confidence, a preconceived opinion, vanity, and weariness are the causes of these astounding mistakes."

Nowadays when laparotomy is so common this form of aneurysm in the abdomen has been operated upon not infrequently. The suddenness of the onset of the pain and its great severity and the absence of pulsation in the tumour are very apt to lead one astray. In Case 2 in which there was an exploratory aspiration we had no idea that it was an aneurysm. I have not looked specially into the literature of the subject but I have had my attention called to several cases. Dr. Williams of Buffalo showed me two specimens, both from patients operated on for abdominal tumour without any idea of the presence of aneurysm. Lockett[10] of Jamaica operated on a large abdominal tumour supposed to be associated with the liver but he found a large non-pulsating aneurysm of the abdominal aorta. While revising this paper for the press a man was admitted to the Radcliffe Infirmary under the care of Dr. E. C. Bevers with great pain and swelling in the right iliac fossa. He had been in one of the London hospitals with renal colic. An operation for suspected appendicitis revealed the presence of a large retro-peritoneal blood tumour which followed rupture of an abdominal aneurysm.

As the three cases in my series illustrate many important points in this form of the disease I shall report them in full.

CASE 2. *Pain in the back for nearly a year; admitted with an enormous abdominal tumour, projecting at the back and flank; no pulsation; thrill and rasping murmur in the epigastrium; extreme emaciation; rapidly growing sarcoma suspected; aspiration; necropsy; large diffuse aneurysm.* (Figs. 1 and 2.)—The patient, a coloured woman, aged about 36 years, was admitted on Sept. 10th, 1894. She had been married eight years, had had four children, two still-born. Her present illness began in October, 1893, with pain in the small of the back. About February, 1894, she noticed a rounded swelling like a small knob on one of the lower ribs. It was immediately under the skin but she could not say whether it was on a rib or between two ribs. In April, 1894, she went to the Pennsylvania Hospital and was confined to bed until August. For the past three weeks the tumour had grown with great rapidity. The chief trouble appeared to have been pain, which at first was continuous and later had been what she called "a jumping ache." She had had to take much morphine for the pain. The patient was extremely emaciated. The most striking feature was a very large tumour on the left side of the abdomen, causing great bulging in the flank and back. The drawing made by Max Broedel (Fig. 1) illustrates better than any description the remarkable appearance presented by this mass. There was *no pulsation* but in the epigastrium there were a loud thrill and a very rasping murmur. A suggestive feature was that the heart sounds were transmitted to the large tumour just below the costal border. It seemed everywhere firm and resistant, though midway between the costal border and the crest of the ilium there were several softer spots to be felt. The skin over the mass was very glistening, not hæmorrhagic. As the nature of the tumour was quite doubtful, on Sept. 15th she was given ether and Dr. Halsted made an exploratory aspiration. A thin blood-coloured fluid was drawn off and the needle seemed to enter a large cavity. A few days later oozing began from the point of puncture and there was a central spot of softening, which gradually enlarged and discharged a very offensive material. The patient died from exhaustion on Oct. 1st.

*Necropsy.*—At the post-mortem examination the body was 150 centimetres long; there was no œdema. The abdomen was swollen. On the left side, extending from the crest of the ilium to within five centimetres of the axilla and occupying the entire thickness of the lateral aspect of the body,

[9] Canada Medical and Surgical Journal, March, 1887.

[10] Brit. Med. Jour., 1901, vol. ii.

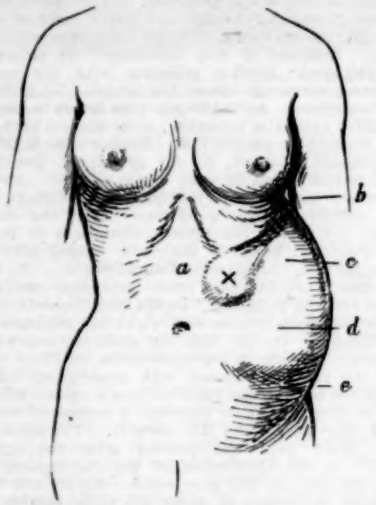
was a tumour mass of rather soft consistence. The epidermis over the tumour was peeling off and in the centre there was a slight defect from which blood-stained serum might be pressed. The orifice of this defect did not exceed two millimetres in diameter. The whole tumour bulged outwards and had a convex surface, the apex of the convexity being at the point of skin defect. The surface tapered towards the ilium on the one side and towards the

FIG. 1.

Appearance of the diffuse aneurysm in Case 2, seen from behind.

axilla on the other. The subcutaneous fat was almost absent; the muscles were very thin. There was no excess of fluid in the peritoneum. Bulging into the peritoneal cavity on the left side was a continuation of the tumour seen externally. It had displaced the left kidney and spleen, which occupied its superior surface—the kidney below, the spleen still covered by the diaphragm. The kidney could be separated and formed no essential part of

FIG. 2.

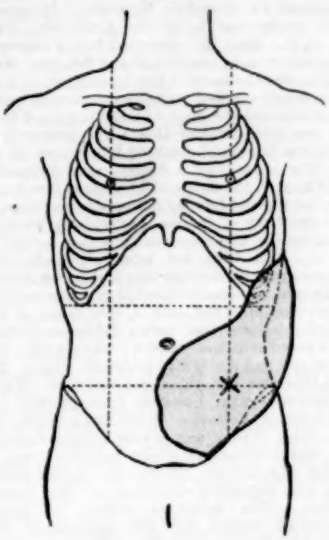



Front view of Case 2. *a*, Marks the site of a loud rasping systolic murmur. *b*, Level of the ninth rib. *c*, A large, rounded, glistening mass; very firm area under the ribs. *d*, Soft spots to be felt in this region. *e*, Level of crest of ilium. ×, A small mass which appears to be separated from the larger mass.

the tumour mass. It was somewhat flattened on the side next the tumour. The ureter was of normal size. The spleen was bound to the diaphragm by old strong adhesions and by similar adhesions to the left lobe of the liver and less firmly to the tumour mass. The tumour mass projecting into the peritoneal cavity was as large as an adult head and reached in its upper portion nearly or quite to the median line. So far as the peritoneal cavity was concerned it was entirely behind and covered by the peritoneum. From just below the diaphragm the aorta was lifted up and ran over the anterior surface of the tumour in the median line. There was nothing of any moment in the condition of the thorax and abdominal organs except that there were numerous gall-stones with some peri-splenitis and slight peri-hepatitis. As regards the heart and aorta the heart was small; the endocardium was slightly stained with bile; all the valves were normal; the muscle was pale; the coronary arteries were normal. The right cavities were filled with coagulated blood. A large sacculated aneurysm sprang from the abdominal aorta above the renal vessels and had ruptured on the right side, forming an enormous blood tumour filled with clots.

CASE 3. *For nearly two years pain in the left side of the abdomen, constant, and in paroxysms; large tumour in the left flank, increase in size; great increase of the pain; incision of tumour with an attempt made to reach the abdominal aorta; death on the operating table.* (Fig. 3.)—A man, aged 33 years, was admitted to Ward E on April 13th, 1896, complaining of attacks of severe pain in the left side of the abdomen. He had had urethritis 12 years previously; he had never had syphilis; he was a temperate man. Two years ago he had attacks of palpitation of the heart and for nearly six months had some dizziness. His present illness he dated from 20 months previously, when he had first a sharp, stabbing pain in the left side of the abdomen. It was always in the same spot in the flank and came on about the same time in the day, and lasted from two to 12 hours. At first it was not very severe but at times for three or four days he would have attacks in which it was bad enough to cause him to double up with the pain. Evidently the pain had been of very great severity and had been the most constant feature in the case. The attacks would come on at any hour of the day or night.

FIG. 3.



Outline of the tumour in Case 3.

The pain started in the left side and radiated upwards and downwards towards the testicle. He described it as cutting in character and said that it was like the pain of a boil. During a severe attack his legs were drawn up and he obtained relief by pressure on the left side of the abdomen. It was sometimes so bad that he had had nausea with it but never any vomiting. The pain was referred chiefly to the back rather than to the front and he said that he had always been more tender on pressure in the lumbar region than in the front part of the abdomen. He had very frequently had to take morphine for the severity of the pain and during the past year he thought that he had lost as much as 25 or 30 pounds in weight. He had never had any blood in the urine nor had he passed any gravel. The patient was a well-built, well-nourished man, rather pale, but the mucous membranes

were of good colour; the pulse was 30; examination of the thoracic organs was negative. The apex beat was visible in the fourth and fifth interspace, in and a little outside the nipple. The maximum impulse was inside the nipple line. The sounds were clear at both the apex and the base; there was no accentuation of the aortic second sound. The abdomen was symmetrical, tympanitic; the skin of the left side was pigmented from the application of plasters, &c. The recti were held very tense. Pressure behind in the lumbar region caused a good deal of pain. On bimanual palpation in the left flank there was felt on deep inspiration what was thought to be the left kidney. Pressure caused a good deal of pain. There were no enlarged glands in the groin. There was marked sclerosis of the veins of the right leg. The testicles and epididymides were normal. This note was made by Dr. Harold Parsons the day after admission. The urine was amber-coloured; it was of specific gravity 1024 and contained no albumin or tube casts. On April 19th Dr. Thayer noticed that there was a resistant mass which could be taken between the hands in the left renal region, very tender on pressure. The abdominal muscles were, however, so rigid that thorough examination was not possible. Early on the morning of the 20th the patient was awakened with a very intense pain in the left side of such severity that he required morphine hypodermically. At the time of the visit the muscular resistance on the left side of the abdomen was very marked. The patient complained of great pain on pressure in front and more particularly behind. On deep inspiration nothing could be seen and on palpation nothing more definite was to be felt than was noted on the 19th. On the 22nd, at 5 P.M., the patient began to have very severe pain in the left side, similar, he said, to the pain of his ordinary attacks but much more intense than he had ever had before. At 5.30 Dr. Thayer dictated the following note: "In left side of abdomen there is now a large tumour occupying the entire flank, extending to the umbilicus and reaching almost to Poupart's ligament. It emerges from beneath the costal margin at the ninth rib. The normal depression of the flank is converted into a convexity. The greatest prominence is about midway between the anterior superior spine and the navel. On inspection it is seen that this presents a well-marked pulsation, particularly in the flank between the ribs and the crest of the ilium, and to a less extent as far over as the middle line. The tumour is uniformly dull, and there is a good deal of tenderness on pressure." (Fig. 3.) The mass had a boggy, semi-fluctuating feel—particularly at × in the figure. The patient found a good deal of relief by having the left leg drawn up, and there was some pain down the back of the leg, particularly when extended. Rectal examination was negative. The face looked blanched; the pulse was 120. The red blood corpuscles were about 3,000,000 per cubic millimetre; the leucocytes under 5000 per cubic millimetre. A needle inserted into the most prominent part of the mass obtained only a few drops of blood. On April 23rd the patient had had a fairly comfortable night. Dr. Thayer noted that the patient's complexion had become more sallow and had a slightly yellowish tinge. The tumour on the left side was not quite so prominent. The pulsation in the upper part was, however, more marked, and at the point of maximum pulsation there was a single shock heard but no murmur. There was a very suspicious fluctuation in the mass, the outlines of which remained very much the same as the day before. When the patient turned on his right side the expansile character of the pulsation was very evident. The recurring attacks of pain, the progressive loss of weight, and the appearance of a tumour in the flank were suggestive of new growth, and it was thought possible that the pulsation might be due to extreme vascularity. The other possibility was an aneurysm of one of the branches of the abdominal aorta, or of the aorta itself, and this view was favoured by the rapid appearance of the growth and the marked impulse. The patient's condition became desperate and he urged that something should be done. Dr. Halsted determined to try to reach the abdominal aorta. Accordingly the tumour was fully exposed by median incision and was found to be an immense retroperitoneal blood cyst occupying the left half of the abdomen, with the colon passing along its right margin. A large mass could be felt high up. The aorta was exposed and an attempt was made to compress it. As the large clots turned out they were followed in a moment or two by a gush of bright arterial blood and the patient died instantly.

CASE 16. *Pain in the side; formation of a tumour; sac wired; melæna, three attacks; gradual improvement; four months later severe pain with rapid increase in the size of the tumour, which filled the entire left side; death from exhaustion; necropsy, huge diffuse aneurysm* (Fig. 4).—The patient was a man, aged 49 years, by occupation a bar tender. He was first admitted on March 23rd, 1899, with acute lobar pneumonia. At that time he denied ever having had syphilis. The course was uneventful and he made a complete recovery. There was nothing to indicate an aneurysm; he complained of no pain; no mass was felt in the abdomen. The involvement was of his left lower lobe and there occurred a slight pleural effusion, straw-coloured fluid being withdrawn by the aspirating needle. The patient was readmitted on April 16th, 1904. Since the previous admission he had been a cook; he had had to lift heavy pots and kettles and had been exposed to rapid changes of temperature. He had been in the habit of drinking one bottle of beer daily but no whisky or gin. On the previous admission, however, he acknowledged having been a pretty heavy drinker as a young man. He again denied syphilis; no history was to be obtained of secondary symptoms. The onset of the present illness occurred six months previously with pain in the left flank, constant, dull, and aching in character. The pain was relieved by pressing the epigastrium against the corner of the table. Ten weeks previously he was admitted to St. Joseph's Hospital where a diagnosis of aneurysm was made. At this time he had pain in the left testicle and adjacent portions of the thigh. The pain was increased by lying on the left side and also by over-eating. The appetite had been good and except for the symptoms mentioned there had been no distress; there was no loss of weight. On admission the heart was slightly enlarged; the second aortic sound was markedly accentuated and ringing. The arteries, brachials and radials, were definitely felt, but not markedly sclerosed. The temporals could not be felt. On April 19th the following note was made: "Healthy-looking, fairly robust man. Arteries are a little thickened. He looks as if he had lost a little weight. Pulsation in upper abdomen and left hypochondrium; maximum at junction. Pulsation a little more to left than to right. Cardiac pulsation corresponds closely with abdominal pulsation; abdominal pulsation a trifle behind cardiac pulsation. No difference between infracostal grooves. Pulsation and shock reached to, but did not lift, the ensiform. The pulsation was seen as far as navel. Lessened on deep breathing. No pulsation in back. Palpation; forcible pulsation with the hand on epigastrium; maximum about the centre. No thrill. No marked tenderness. As the fingers pass deeply in there is a very positive expansile pulsation; more marked to the left; felt 2·5 inches from median line. Tumour mass is definitely felt, particularly to left, as far as nipple line; large, rounded, cannot be felt to same extent to right; can be felt below, where there is a very definite thrill. Short, rough systolic murmur heard everywhere over the tumour; maximum just about the centre; diminishes in intensity toward ensiform; heard at the back. Heard much more loudly to the left. Aortic second sound ringing. No tumour in flank itself; one can pass hand deeply into renal region. Femorals are both pulsating." On the 22nd the blood pressure in the dorsalis pedis arteries was—right 210 millimetres, left 200 millimetres. On the 29th the aneurysm was wired by Dr. Finney. An incision was made at the border of the left rectus; the sac was exposed with considerable difficulty. On palpation the sac was found to have a rather wide base. 11 feet of silver wire were inserted; a current of ten milliampères was passed for 15 minutes. The incision was closed. Some pain was present after the operation, principally in the distribution of the ilio-inguinal nerve. On May 2nd the pain was more severe. On the 5th hæmorrhage from the bowels of about 100 cubic centimetres of clotted blood took place. There was no change otherwise. Some vomiting occurred during the next few days but no blood. The first dressing was done on May 9th. The wound was healed perfectly; pulsation was apparently more marked than before the operation; the tumour mass was more prominent. A well-marked thrill and bruit could be heard over it. On the 27th a second intestinal hæmorrhage took place. The patient was having much pain and at times was irrational. On the 28th there was a third hæmorrhage of 150 cubic centimetres. On June 24th it was noted that the patient was doing well; he was a good colour. The tumour seemed less prominent and felt very hard. The spleen was pushed over to the left. A systolic

bruit could be heard to the right of the line of incision but not to the left. Behind there was a very marked pulsation. There was a little bulging in the lumbar region. Pulsation was visible at and beneath the eleventh rib; pulsation was also felt. On August 21st the patient had more pain than usual. He slept with morphine but on the following morning his face appeared rather blanched; there was some fulness in the left flank which was extremely tender. Pulsation of the aneurysm was less than on the previous day. On the 23rd it was noted that below the sixth interspace in the mid-axilla, throughout the left lumbar region and extending forward to within 7·5 centimetres of the mammary line, was an area of flatness. The mass in front was not more prominent than it had been but pulsation was not quite so visible. There was considerable tenderness over the original mass. Over the mass in the flank, however, the tenderness was very marked. This whole prominent mass in the flank was pulsating but no bruit was heard over it. The bruit previously heard in the hypochondrium and epigastrium was not present. The blood count had fallen from 3,800,000 to 2,520,000. It was thought that a rupture had taken place into the retro-peritoneum. This became more evident during the next few days, the mass in the flank increasing in size and being directly continuous with the tumour previously felt in front. On the 26th it was noted that the whole mass pulsated. The following note was made on Oct. 7th. "Large tumour filling whole flank, lifting costal margin. Pulsation remarkably diffuse, visible from lower border of sixth rib to iliac crest and as far over as navel. Tumour

FIG. 4.

Reproduced from a photograph of the tumour in Case 16. The aneurysm has lifted the left costal arch and fills the whole of the left side of the abdomen.

has lifted whole costal margin to sixth and seventh interspaces. It bulges in the flank. The pulsation is definitely felt and lifts the finger. Bimanual palpation definitely expansile. No diastolic shock. Loud murmur in middle line, heard along left costal margin, becomes feeble in flank. Second sound heard over front of tumour." Some diminution in the size of the tumour was noted during October and November. On Oct 10th the patient began to have some fever, the temperature rising to 102° F. On Nov. 13th and 14th it was noted that the tumour was somewhat larger, extending forward farther in the epigastrium. The pain, which was always severe, became worse; the patient's general condition became more serious and he died on Nov. 16th.

*Necropsy.*—At the post-mortem examination (which was performed by Dr. MacCallum) the following condition was found: aneurysm of the abdominal aorta; encapsulated hæmatoma; erosion of the vertebræ, ribs, and ilium; destruction of the left kidney and adrenal, with obliteration of the renal artery and ureter; cavernous angiomata of the liver; chronic diffuse nephritis; and œdema of the lungs.

There are several points to which reference may be made in these cases. The enormous size of the tumour in Case 2 and the absence of pulsation, the rapid growth, the emaciation, and the anæmia led to the diagnosis of a new growth. The blood obtained on aspiration did not contra-indicate this, as blood is often withdrawn from sarcomata. The irregular masses in front were also suggestive of tumour. The thrill and bruit should perhaps have aroused suspicion but the former, at least, is not infrequently heard over tumours. The absence of pulsation is probably met with when, as in this case, the hæmatoma is enormous and the patient is weak from loss of blood. The same mistake was made by Stokes (Case 80 in his book on the Heart) in a patient with enormous effusion into the mesocolon. In Case 3 the increase in size of the tumour was so rapid that the same mistake was not made. One has to bear in mind, however, that expansile pulsation, quite forcible too, is felt in large sarcomata, more particularly in the big growths from bone, as in the iliac region and the thigh. Even when the sac, as in this case, is laid open the presence of blood and transformed leathery clots is not conclusive evidence for aneurysm. There are old sarcomata among abdominal tumours in which the greater part of the growth is made up of altered reddish-grey, dry blood clot, not unlike that of an aneurysmal sac. Such a case I reported to the Philadelphia Pathological Society in 1886. In Case 16 we had an opportunity of studying the gradual formation of the secondary tumour which reached a very large size and then shrank a little. The primary tumour has been observed to diminish in size after rupture. The attitude of the patient is sometimes very remarkable. In Case 16 the patient lay for months with the left thigh drawn up and it was impossible to extend the leg. Rapid anæmia, emaciation, and slight fever follow rupture with the formation of a large hæmatoma and these features, added to the presence of a large abdominal tumour, naturally suggest a new growth.

*Treatment.*—We cannot expect to do much towards the cure of internal aneurysm. Nature occasionally cures a case. I have seen at least two instances of spontaneous healing in aneurysm of the abdominal aorta. Now and again the physician is able to effect a cure. I have not been so fortunate to see such a case. In a few instances the surgeon prolongs life or even effects a complete healing. In the cases here reported the general measures were carried out which are believed to favour coagulation in the sac. We have given them a very full trial, particularly the combination of rest with low diet. Three cases received very full and thorough treatment with gelatine without much benefit. In Case 4 it seemed to do some good and relieved pain. A point of interest in this series is the large number of cases treated surgically. I have to thank my colleague, Dr. Halsted, for his kind interest, and his associate, Dr. Finney, to whom he handed over most of the cases. Dr. Hunner, also, has been helpful. In Case 1 an exploration was made to determine whether anything could be done. The tumour was so moveable that it was thought to be connected possibly with one of the branches of the abdominal aorta, but it was found to spring directly from the vessel itself. The sac seemed so solid, and the old man's condition was so good, that it seemed best to do nothing. In Case 2 a large, diffuse aneurysm was punctured for diagnostic purposes. The three special surgical measures which have been introduced are: ligation of the aorta, compression of the vessel above the sac, and the insertion of foreign material into the sac to promote coagulation with or without electrolysis. In Case 3 an attempt was made to reach the abdominal aorta and to compress it. The sac was opened freely and large clots were turned out, but before the vessel could be compressed above it there was a sudden gush of bright scarlet blood and the patient died suddenly.

There have been about a dozen cases of ligation of the aorta for aneurysm, all, I believe, fatal. Dr. Keen in reporting his case (the twelfth) gives the literature.[11] Compression above the sac has been more successful and in the well-known case under Dr. Murray of Newcastle, operated upon in 1863, the aneurysm was cured and the patient remained well for six years. In 1864 Mr. Moore of the Middlesex Hospital attempted the cure of aneurysm by the insertion of a foreign body, since which time this method of procedure has been extensively practised and has been modified by Corradi who passed an electric current through the wire. The technique of the operation has been much improved, particularly by Dr. D. D. Stewart of Philadelphia and by Dr. Finney and Dr. Hunner, and in the *Johns Hopkins Bulletin* for 1900 the latter has given a description of the method which has been used in this series. In seven of the cases the sac was wired and an electric current was passed. The results have been as follows: Case 5 died 48 hours after from rupture of the sac into the pleura. Case 8 died on the ninth day from hæmorrhage into the peritoneum. Case 10 was discharged at the end of four weeks, improved; no subsequent history. Case 11 died on the fourteenth day from rupture of the sac. Case 12 was much improved; the pain had diminished, the pulsation was lessened,

[11] Philadelphia Medical Journal, 1900, p. 670.

and he was discharged at the end of a month; no subsequent history. Case 13 was the most satisfactory in the series and may be referred to at some length. The patient was a young man under 30 years of age at the time of onset. When admitted he was suffering greatly and had severe gastric symptoms. The operation was followed by marked improvement, reduction in the size of the sac, disappearance of the pain, and complete relief of the nausea and vomiting. He returned to the hospital every year for a few weeks. At the last visit the sac had increased in size and three and a half years from the date of the operation he died from rupture of the sac. In Case 16 there were three hæmorrhages from the bowels after the operation but for two months there was improvement. Then rupture occurred into the retroperitoneal tissues with the formation of a large tumour filling the left side of the abdomen. Death occurred six and a half months after the operation.

Oxford.

# ON CERTAIN POINTS IN CONNEXION WITH THE EXALTATION AND REDUCTION OF BLOOD COAGULABILITY BY THERAPEUTIC MEASURES,

## AND IN PARTICULAR ON THE EFFECT PRODUCED UPON THE BLOOD BY THE INGESTION OF CALCIUM CHLORIDE, CALCIUM LACTATE, MAGNESIUM CARBONATE, COW'S MILK, AND OTHER MEDICINAL AGENTS.

BY A. E. WRIGHT, M.D. DUB.,

SOMETIME PROFESSOR OF PATHOLOGY, ARMY MEDICAL SCHOOL, NETLEY; PATHOLOGIST TO ST. MARY'S HOSPITAL;

AND

W. ERASMUS PARAMORE, M.A., M.B. CANTAB.

(*From the Pathological Laboratory, St. Mary's Hospital, London, W.*)

FEELING that real advances in therapeutics will be made only when the effects of medicinal agents shall have been followed out on man by the aid of accurate quantitative methods we have recently—carrying on a line of research already opened up by one of us—made a more detailed study of the accelerating or, as the case may be, retarding action which is exerted by certain medicinal agents upon blood coagulation. We have investigated in particular the accelerating effect which is, as one of us has previously shown, exerted by calcium chloride,[1] and by milk[2] respectively. Further, we have drawn into the scope of this investigation also the lactate of calcium and the carbonate of magnesium. Lastly, we have carried a step further the investigation of the effect exerted upon blood coagulation by the ingestion of decalcifying agents.

*Method employed for measuring the content of the blood in calcium and magnesium salts.*—The method we have employed in the researches reported below is that already described by one of us in conjunction with Lieutenant H. H. G. Knapp, I.M.S., in a paper dealing with the causation and prevention and treatment of the thrombosis which occurs in connexion with typhoid fever.[3] It may briefly be explained here that in the method in question progressive dilutions of a decalcifying solution (oxalate of ammonium) are mixed in a capillary tube with a series of similar volumes of blood. The concentration of the solution required for the complete decalcification is then taken as the measure of the calcium (and magnesium) salts in the blood. Evidence of such complete decalcification of the blood is obtained where it is found that the red corpuscles, instead of becoming engaged in a clot, settle in an even layer at the bottom of the column of fluid.

In the experimental records below the result of the measurements of calcium and magnesium salts in the blood is in each case registered by particularising the concentration of the ammonium oxalate solution[4] which just sufficed to prevent the formation of a coagulum in an equal volume of blood.

*Method employed for measuring the coagulation time of the blood.*—The method employed for measuring the coagulation time of the blood is the method originally described by one of us modified in certain of its details as described below.

*Pattern of coagulation tube employed.*—The form of coagulation tube which is depicted below was employed. It consists, as will be seen, of a capillary tube which is divided off

A–B, portion of tube occupied by air; B–C, calibrated portion of the tube which contains the blood; C–D, portion of the tube which contains the mercury which serves to plug the throttled orifice of the tube. On the upper end of the holder is a collapsed rubber teat which maintains the negative pressure and holds the contents of the capillary tube in position when placed upright in water.

by marks into three segments and which is by the aid of sealing-wax luted in an airtight manner into a glass holder. The central segment has been standardised by the aid of mercury and an automatic pipette so as to contain five cubic millimetres in a length of five centimetres. This segment serves for the reception of the blood which is to be tested. Some little distance beyond the fiduciary mark which delimits the upper margin of this segment the capillary tube terminates, as shown in the diagram, in a hair-fine extremity. This upper portion of the tube is filled in with mercury which blocks the hair-fine orifice as soon as the column of blood has taken up its proper position in the tube. Distal to the fiduciary mark which indicates the lower margin of the central segment is a third portion of the tube which is filled in with air so as to prevent any commixture of water with the blood when the coagulation tube is immersed in the bath which maintains the proper temperature during the period of observation.

*Method of making the pattern of coagulation tube described above.*—The first operation in making a coagulation tube is to draw out a piece of ordinary glass tubing into a tube of capillary dimensions. The second is to standardise the tube thus drawn out and to select for use a segment where the bore is of such dimensions as to contain five cubic millimetres of mercury in a length of five centimetres. The details of the operation have already been described in a previous paper in THE LANCET.[5] The third operation is to draw out the capillary tube at some little distance beyond one or other of the fiduciary marks into a hair-fine extremity which shall be pervious to air but impervious to mercury. This is achieved by inserting the capillary tube into a small peep light and drawing it out rapidly after removing it from the flame. The fourth operation is to place a collar of sealing wax round the capillary tube near the neck and to drop the tube—hair-fine extremity uppermost—into, and down, the throat of a glass holder such as is shown in the diagram. By gently warming the throat of the holder the collar of sealing wax is now melted and the capillary tube is fixed in position in an airtight manner. The fifth and last operation is to fix the length of the distal segment of the coagulation tube so that its cubic capacity may be exactly equal to that of the proximal segment. This is achieved as follows. A closely fitting rubber teat having first been fitted to the upper end of the glass holder and a vacuum having been established in the interior the distal end of the coagulation tube is introduced into a reservoir of mercury. By "trial and error" there is now taken up into the tube such a quantum of mercury as will just fill in the proximal segment of the tube. This quantum of mercury having been arrived at, it is by pressure on the teat driven down into the distal segment of the tube, the column of mercury being arrested at the point where its proximal end comes level with the distal calibration mark. The capillary tube is now cut across at the point indicated by the distal end of the mercury column.

*Method of measuring the coagulation time of the blood by the aid of the coagulation tubes here in question.*—A drop of blood is obtained by pricking the side of the finger near the nail and applying very gentle pressure to the finger pulp. Blood having thus been obtained a coagulation tube which has been furnished with a tightly fitting teat, and which has been primed with the appropriate quantity of mercury, is taken in hand. After the column of mercury has been driven down by pressing on the teat until its upper border comes level with the distal calibration mark, the extremity of the coagulation tube is introduced into the drop of blood on the finger. When the pressure on the teat is relaxed the blood enters the tube. Its inflow is arrested by pressure on the teat as soon as the proximal end of the column of mercury which is in advance of the blood has come level with the proximal calibration mark. When this point has been reached the end of the coagulation tube is withdrawn from the drop of blood on the finger and the mercury is allowed to go home to the extremity of the tube and to engage itself in the hair-fine extremity, preventing further indraught. The column of blood will now be found to have taken up its proper position in the central segment of the tube.

Leaving the rubber teat in position the coagulation tube is now

[1] Brit. Med. Jour., July 29th, 1893, and July 14th, 1894; THE LANCET, Jan. 18th, 1896.

[2] THE LANCET, Dec. 6th, 1902, p. 1531.

[3] THE LANCET, Dec. 6th, 1902, p. 1531.

[4] The equivalent of CaO can from the data obtained be readily computed if it is borne in mind that 142 parts by weight of ammonium oxalate enter into combination with 56 parts by weight of calcium oxide.

[5] Loc. cit.

immersed in a water bath at 37° C. placed ready to hand. After the expiration of a minute to a minute and a half the condition of the blood is tested by removing the tube from the water bath and making pressure on the test in such a manner as to drive out the contained blood, if unclotted, on to a piece of filter paper. When one tube has been tested in this manner a second is taken in hand[6] and is filled in from a freshly made puncture. A series of three tubes generally suffices for the whole estimation.

*Example of the practical working out of the above method.*—Seven coagulation tubes are filled in seriatim with blood from the finger of a normal man and are placed in a water bath at 37° C., the times of filling in and testing the tubes being in each case noted.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tube 1 | blown out on to filter paper after | 30 | sec. | | | No clot. |
| Tube 2 | ,, | ,, | ,, | 45 | ,, | ,, |
| Tube 3 | ,, | ,, | ,, | 1 | min. | ,, |
| Tube 4 | ,, | ,, | ,, | 1 | ,, 15 sec. | ,, |
| Tube 5 | ,, | ,, | ,, | 1 | ,, 30 ,, | ,, |
| Tube 6 | ,, | ,, | ,, | 1 | ,, 45 ,, | Shred of fibrin. |
| Tube 7 | ,, | ,, | ,, | 2 | ,, | Firm clot. |

Evidence of fibrin formation having been obtained after the expiration of 1 minute 45 seconds, while no trace of fibrin was found after 1 minute 30 seconds, the coagulation time of the blood is here taken as 1 minute 37 seconds.

*Points to which attention was directed in connexion with the calcium salts and other medicinal agents here experimented with.*—We have in the experiments recorded below sought to elicit (*a*) how soon after the ingestion of each medicinal agent the coagulability of the blood is definitely increased? (*b*) what is the maximum acceleration of coagulation which can be achieved by the ingestion of a single dose of the calcium salt or other medicinal agent employed? (*c*) is the increased coagulability of the blood associated with a definite increase in the calcium or, as the case may be, magnesium salts in the blood? and (*d*) how long is the condition of exalted coagulability in each case maintained? These questions are to some extent resolved by the subjoined protocols.

### CALCIUM CHLORIDE.

*Observation 1.*—H. S. A healthy man. 4 P.M.: Coagulation time, 2 minutes 10 seconds. Complete decalcification with a 1 in 1800 solution of ammonium oxalate. 4.10 P.M.: Four grammes (60 grains) of calcium chloride *cryst.* were administered. 5.10 P.M.: Coagulation time, 35 seconds. A solution of 1 in 800 of ammonium oxalate was required for complete decalcification.

*Observation 2.*—M. G. A patient suffering from furunculosis. Feb. 20th, 1905:—3.30 P.M.: Coagulation time, 1 minute 35 seconds. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification. 3.35 P.M.: Four grammes of calcium chloride *cryst.* were administered. 5.5 P.M.: Coagulation time, 45 seconds. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification.

*Observation 3.*—De V. K. A healthy man. May 16th, 1905:—2.30 P.M.: Coagulation time, 2 minutes. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification. 2.45 P.M.: Four grammes of calcium chloride *cryst.* were administered. 3.35 P.M.: Coagulation time, 30 seconds. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification. 17th: Coagulation time, 40 seconds. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification. 18th: Coagulation time, 40 seconds. A solution of 1 in 1500 of ammonium oxalate was required for complete decalcification. 19th: Coagulation time, 30 seconds. A solution of 1 in 2100 of ammonium oxalate was required for complete decalcification. 20th: Coagulation time, 30 seconds. A solution of 1 in 900 of ammonium oxalate was required for complete decalcification. 23rd: Coagulation time, 45 seconds.

*Observation 4.*—W. E. P. A healthy man. May 9th, 1905:—4 P.M.: Coagulation time, 1 minute 50 seconds. A solution of 1 in 1050 of ammonium oxalate was required for complete decalcification. 4.15 P.M.: Four grammes of calcium chloride were ingested. 5.15 P.M.: Coagulation time, 55 seconds. A solution of 1 in 750 of ammonium oxalate was required for complete decalcification. 10th: Coagulation time, 1 minute. A solution of 1 in 750 of ammonium oxalate was required for complete decalcification. 11th: Coagulation time, 1 minute. A solution of 1 in 600 of ammonium oxalate was required for complete decalcification. 12th: Coagulation time, 1 minute. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification. 13th: Coagulation time, 1 minute. A solution of 1 in 1200 ammonium oxalate was required for complete decalcification. 15th: Coagulation time, 1 minute 30 seconds. A dilution of 1 in 1800 of ammonium oxalate was required for complete decalcification.

*Observation 5.*—X. Y. A patient who was suffering from œdema of the eyelids and lips and aggravated urticaria. July 5th, 1905:—2 P.M.: Coagulation time, 2 minutes 15 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 3.50 P.M.: Four grammes of calcium chloride were administered. 5.55 P.M.: Coagulation time, 45 seconds. A solution of 1 in 750 was required for decalcification. 13th: The patient reported that the urticaria had completely disappeared. Coagulation time, 48 seconds. A solution of 1 in 900 was required for decalcification.

*Observation 6.*—A. E. W. A healthy man who had as a boy frequently been the subject of aggravated giant urticaria on the ingestion of decalcifying agents (acid fruits, &c.). Feb. 30th, 1905:—1.30 P.M.: Coagulation time, 1 minute 45 seconds. A solution of 1 in 1500 of ammonium oxalate was required for complete decalcification. 1.45 P.M.: Four grammes of calcium chloride were ingested. 2.45 P.M.: Coagulation time, 1 minute 30 seconds. A solution of 1 in 1500 of ammonium oxalate was required for complete decalcification.

[6] Where only a single tube is available it will still be possible to measure the coagulation by blowing out on to the filter paper a series of samples of the contents of the tube, returning the tube to the water bath in the intervals.

*Observation 7.*—A. E. W. (*vide* Observation 6 *supra*). May 12th, 1905:—2.30 P.M.: Coagulation time, 2 minutes 10 seconds. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification. 2.50 P.M.: Four grammes of calcium chloride were ingested. 3.50 P.M.: Coagulation time, 1 minute 50 seconds. A solution of 1 in 1200 of ammonium oxalate was required for complete decalcification.

### SUMMARY OF RESULTS OBTAINED WITH CALCIUM CHLORIDE.

(*a*) *Time required for the achievement of increased blood coagulability.*—The observations show in a very concordant manner that the full accelerating effect of calcium chloride is achieved within the first hour after its administration.

(*b*) *Extent to which the coagulability of the blood is increased by the administration of calcium chloride.*—The data obtained in this series of observations are as follows. With a single dose of four grammes (60 grains) of calcium chloride *cryst.* the coagulation time of the blood was reduced—

In Observation 1 from 2 minutes 10 seconds to 35 seconds—i.e., in the ratio of 1 to $\frac{1}{4}$.
In Observation 2 from 1 minute 35 seconds to 45 seconds—i.e., in the ratio of 1 to $\frac{1}{2}$.
In Observation 3 from 2 minutes to 30 seconds—i.e., in the ratio of 1 to $\frac{1}{4}$.
In Observation 4 from 1 minute 50 seconds to 55 seconds—i.e., in the ratio of 1 to $\frac{1}{2}$.
In Observation 5 from 2 minutes 15 seconds to 45 seconds—i.e., in the ratio of 1 to $\frac{1}{3}$.
In Observation 6 from 1 minute 45 seconds to 1 minute 30 seconds—i.e., in the ratio of 1 to $\frac{5}{6}$.
In Observation 7 from 2 minutes 10 seconds to 1 minute 50 seconds—i.e., 1 to $\frac{5}{6}$.

(*c*) *Absorption of calcium salts into the blood.*—In Observations 1, 3, and 5 satisfactory evidence was obtained of the entrance of calcium salts into the blood. In the second of these cases, where the observations were extended over a week, the lime salts in the blood were seen to diminish contemporaneously with the return in coagulability to the normal.

(*d*) *The period during which the effect of the single dose of calcium was maintained.*—In Observations 3, 4, and 5 where this point was investigated the increased blood coagulability was found to be maintained in Observation 3 for five days, in Observation 4 for eight days, and in Observation 5 for eight days.

*Comment.*—It is brought out in the results tabulated under (*b*) *supra* that there are as between different individuals conspicuous differences in their capacity of responding to calcium chloride. These differences may, in view of the facts summarised under (*c*); further in view of the fact that results altogether similar to those recorded in Observations 6 and 7 in connexion with A. E. W. had previously been obtained upon him on quite a number of different occasions; and lastly, in view of the case of a bleeder[7] whose blood coagulation was quite uninfluenced by large doses of calcium chloride given by the mouth, while it was conspicuously increased by hypodermic injection of a suitable calcium salt; be referred to constitutional differences in the matter of the absorption of calcium chloride. A constitutional incapacity, or partial incapacity, of this nature may perhaps underlie the "idiosyncrasy" of certain persons to suffer from those forms of urticaria which one of us has denoted "decalcification urticarias."[8] We might quite reasonably expect that the absorption into the blood of decalcifying agents (soap from soap enemas; oxalic acid from rhubarb; citric, tartaric, and malic acid from sour fruits, fruit juices, and acid wines) would induce a condition of diminished blood coagulability, and in association with this "serous hæmorrhages"[9] in persons who happened to be unable to maintain their store of calcium salts at a high level, or to replenish it rapidly when encroached upon. It is interesting in this connexion to bring into relation with the defective power of absorption for calcium chloride demonstrated to exist in A. E. W. the fact that he had suffered for a period of years during boyhood from aggravated giant urticaria whenever any decalcifying agent was ingested. Again, it is perhaps deserving of passing mention that in his case, contrary to what was shown[10] by him to obtain in connexion with those forms of urticaria

[7] It is to be noted that a deficient power of absorbing calcium salts is not by any means a common feature in hæmophilia. One of us, in recommending the employment of calcium chloride in hæmophilic hæmorrhages, has given examples of the notable acceleration of coagulation time which may generally be obtained in these patients by the exhibition of calcium chloride. (Brit. Med. Jour., July 14th, 1894; THE LANCET, Jan. 18th, 1896, p. 153.)

[8] Transactions of the Pathological Society, vol. li., part 3, 1900.

[9] THE LANCET, Sept. 19th, 1896, p. 807.

[10] THE LANCET, Jan. 18th, 1896; British Journal of Dermatology, vol. viii., No. 89.

which are superinduced by serum injections, the exhibition of calcium chloride neither warded off nor relieved a severe attack of urticaria engendered by the injection of serum.

Whatever may be the view taken with regard to these suggested explanations it will not be questioned that it became desirable, in view of the facts disclosed above, to see whether an effective substitute could be obtained for calcium chloride for employment in those cases where this latter drug by reason of its non-absorption fails to increase the coagulability of the blood.

We selected for purposes of study the lactate of calcium, a salt which had already for some time past been employed by one of us with very satisfactory results in the control of actual and serous hæmorrhage. This salt recommends itself for use, firstly, by the fact that it is devoid of unpleasant taste, sufficiently soluble (about 1 in 10) in water, and suitable for administration in the form of powders, and, secondly, by the fact that the salts of organic acids, and more particularly of lactic acid, are known to be readily oxidised in the system, with the result that their bases are placed more fully at the disposal of the organism than these would be the case when the corresponding mineral acid salts are exhibited.

### CALCIUM LACTATE.

*Observation 1.*—M. C. A patient suffering from furunculosis.[11] April 18th, 1905:—3.10 P.M.: Coagulation time, 1 minute 50 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 3.30 P.M.: Four grammes of calcium lactate were administered. 4.20 P.M.: Coagulation time, 45 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 6 P.M.: Coagulation time, 30 seconds. A solution of 1 in 900 of oxalate of ammonium was required for complete decalcification.

*Observation 2.*—De V. K. A healthy man.[12] Feb. 20th, 1905:—5.10 P.M.: Coagulation time, 2 minutes. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 5.15 P.M.: Four grammes of calcium lactate were ingested. 6 P.M.: Coagulation time, 50 seconds. A solution of 1 in 1800 of oxalate of ammonium was required for complete decalcification. 9.15 P.M.: Coagulation time, 40 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 21st: Coagulation time, 50 seconds. A solution of 1 in 900 of oxalate of ammonium was required for complete decalcification. 22nd: Coagulation time, 45 seconds. A solution of 1 in 1000 of oxalate of ammonium was required for complete decalcification. 23rd: Coagulation time, 50 seconds. A solution of 1 in 1200 of oxalate of ammonium was required for complete decalcification. 24th: Coagulation time, 37 seconds. A solution of 1 in 800 of oxalate of ammonium was required for complete decalcification. 25th: Coagulation time, 45 seconds. A solution of 1 in 1000 of oxalate of ammonium was required for complete decalcification. 26th: Coagulation time, 45 seconds. A solution of 1 in 1000 of oxalate of ammonium was required for comple decalcification. 27th: Coagulation time, 48 seconds. A solution of 1 in 1000 of oxalate of ammonium was required for complete decalcification. March 6th: Coagulation time, 55 seconds. A solution of 1 in 1000 was required for complete decalcification.

*Observation 3.*—F. M. The patient was suffering from phthisis. Feb. 7th, 1905:—2.30 P.M.: Coagulation time, 1 minute 50 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 8th: 2 P.M.: Coagulation time, 1 minute 55 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 2.15 P.M.: Four grammes of calcium lactate were administered. 3 P.M.: Coagulation time, 22 seconds. A solution of 1 in 800 of oxalate of ammonium was required for complete decalcification. 9th: Coagulation time, 1 minute 35 seconds. A solution of 1 in 1000 of oxalate of ammonium was required for complete decalcification.

*Observation 4.*—A healthy man. Feb. 6th, 1905:—2 P.M.: Coagulation time, 1 minute 50 seconds. A solution of 1 in 1200 of oxalate of ammonium was required for complete decalcification. 2.20 P.M.: Four grammes of calcium lactate were administered. 2.30 P.M.: Coagulation time, 1 minute 50 seconds. 2.40 P.M.: Coagulation time, 1 minute 20 seconds. 3.50 P.M.: Coagulation time, 25 seconds. A solution of 1 in 800 of oxalate of ammonium was required for complete decalcification. 7th: Coagulation time, 1 minute 25 seconds. A solution of 1 in 800 of oxalate of ammonium was required for complete decalcification. 10th: Coagulation time, 45 seconds. A solution of 1 in 800 of oxalate of ammonium was required for complete decalcification.

*Observation 5.*—A healthy man. Feb 21st, 1905:—3 P.M.: Coagulation time, 1 minute 40 seconds. A solution of 1 in 1800 of ammonium oxalate was required for complete decalcification. 3.15 P.M.: Four grammes of calcium lactate were administered. 4 P.M.: Coagulation time, 45 seconds. A solution of 1 in 1800 of oxalate of ammonium was required for complete decalcification. 22nd: Coagulation time, 35 seconds. 24th: Coagulation time, 45 seconds. March 1st: Coagulation time, 1 minute 20 seconds.

*Observation 6.*—A. E. W. A healthy man.[13] May 15th, 1905:—2.45 P.M.: Coagulation time, 2 minutes 5 seconds. A solution of 1 in 1200 of oxalate of ammonium was required for complete decalcification. 3 P.M.: Four grammes of calcium lactate were ingested. 4 P.M.: Coagulation time, 1 minute 5 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification.

*Observation 7.*—W. E. P. A healthy man.[14] Feb. 3rd, 1905:—2 P.M.: Coagulation time, 1 minute 45 seconds. A solution of 1 in 1800 of oxalate of ammonium was required for complete decalcification 2.15 P.M.: Four grammes of calcium lactate were ingested. 3 P.M.: Coagulation time, 1 minute 15 seconds. A solution of 1 in 1000 of oxalate of ammonium was required for complete decalcification. 6 P.M.: Coagulation time, 1 minute 20 seconds. 9 P.M.: Coagulation time, 1 minute 20 seconds. 4th: Coagulation time, 1 minute 35 seconds. A solution of 1 in 2000 of oxalate of ammonium was required for complete decalcification.

[11] A previous observation had been made upon this patient with calcium chloride (*vide* under Calcium Chloride, Observation 2).

[12] An observation was subsequently made upon this "patient" with calcium chloride (*vide* under Calcium Chloride, Observation 3).

[13] Two previous observations made upon this man with calcium chloride are recorded above.

[14] A previous observation made upon this man with calcium chloride is recorded above.

### SUMMARY OF RESULTS OBTAINED WITH CALCIUM LACTATE.

(*a*) *Time required for the achievement of increased blood coagulability.*—As in the case of calcium chloride the effect of the drug is very rapidly manifested. Increased coagulability may, as shown in Observation 4, be registered within 20 minutes of the administration of the drug. The full effect is in practically every case achieved within the course of three-quarters of an hour.

(*b*) *The extent to which the coagulability of the blood is increased.*—With a single dose of four grammes (60 grains) of calcium lactate the coagulation time of the blood was reduced—

In Observation 1 from 1 minute 50 seconds to 30 seconds—i.e., in the ratio of 1 to $\frac{1}{3}$.

In Observation 2 from 2 minutes to 40 seconds—i.e., in the ratio of 1 to $\frac{1}{3}$.

In Observation 3 from 1 minute 50 seconds to 22 seconds—i.e., in the ratio of 1 to $\frac{1}{5}$.

In Observation 4 from 1 minute 50 seconds to 25 seconds—i.e., in the ratio of 1 to $\frac{1}{4}$.

In Observation 5 from 1 minute 40 seconds to 45 seconds—i.e., in the ratio of 1 to $\frac{1}{2}$.

In Observation 6 from 2 minutes 5 seconds to 1 minute 5 seconds—i.e., in the ratio of 1 to $\frac{1}{2}$

In Observation 7 from 1 minute 45 seconds to 1 minute 15 seconds—i.e., in the ration of 1 to $\frac{5}{7}$.

(*c*) *Absorption of calcium salts into the blood.*—In four out of the seven observations satisfactory evidence of the dependence of the increased coagulability upon the absorption of calcium salts was obtained (Observations 1, 2, 4, and 7).

(*d*) *Period during which the effect of a single dose of calcium lactate is maintained.*—This question was investigated only in connexion with Observations 2 and 4. In the former case the effect was maintained for a minimum of 17 days and in the latter for a minimum of four days.

*Comment.*—The data set forth above under (*b*) show very clearly that the acceleration of blood coagulability achieved by the ingestion of four grammes of calcium lactate is, if anything, greater than that achieved with the same dose of calcium chloride. It would seem probable from a comparison of the data set out under (*c*) with the corresponding data obtained with calcium chloride that this more satisfactory result is referable to a readier absorption of the lactate. With regard to the question as to whether the difficulties in connexion with the absorption of lime are solved by the substitution of the lactate for the chloride it will be obvious that no certain conclusions could be arrived at from the limited data as set forth above. At the most these data suggest that the lactate is in the case of one of us (W. E. P.) less well resorbed than the chloride, while in the case of the other of us (A. E. W.) the contrary appears to be the case. We have, however, in the case of the hæmophilic patient already referred to conclusive evidence that the difficulty in connexion with the resorption of calcium is not disposed of by the substitution of the lactate for the chloride. Reserving the further exposition of this case for a subsequent section of this paper we may here pass on to consider a third series of protocols relating to the effect exerted upon blood coagulability by the ingestion of magnesium carbonate.

### MAGNESIUM CARBONATE.

*Observation 1.*—A. E. W. A healthy man. June 20th, 1905: Coagulation time, 2 minutes. 4.30 P.M.: Four grammes of magnesium carbonate were ingested. 21st: Coagulation time, 45 seconds. 22nd: Coagulation time, 1 minute 15 seconds. 23rd: Coagulation time, 1 minute 15 seconds.

*Observation 2.*—W. E. P. A healthy man. June 19th, 1905:—12.30 P.M.: Coagulation time, 1 minute 5 seconds. Coagulation averted when the blood was mixed with an equal volume of a 1 in 1800 solution of oxalate of ammonium. 3.35 P.M.: Four grammes of magnesium carbonate were ingested. 4.45 P.M.: Coagulation time, 30 seconds. 20th: Coagulation time, 28 seconds. Coagulation not averted until the blood was mixed with an equal volume of a 1 in 600 solution of oxalate of ammonium. 21st: Coagulation time, 25 seconds. Coagulation not averted until the blood was mixed with an equal volume of a 1 in 900 solution of oxalate of ammonium. 22nd: Coagulation time, 33 seconds. Coagulation not averted until the blood was mixed with an equal volume of a 1 in 600 oxalate of ammonium solution. 23rd: Coagulation time, 42 seconds. Coagulation averted when the blood was mixed with a 1 in 1200 solution of oxalate of ammonium.

*Observation 3.*—R. A healthy man. June 19th, 1905:—4.30 P.M.: Coagulation time, 40 seconds. Coagulation averted when the blood

was mixed with an equal volume of a solution of 1 in 2400 of oxalate of ammonium. 5 P.M.: Four grammes of magnesium carbonate were ingested. 7 P.M.: Coagulation time, 1 minute 10 seconds. Coagulation only incompletely averted when the blood was mixed with an equal volume of a solution of 1 in 2400 of oxalate of ammonium. 20th: Coagulation time, 25 seconds. Coagulation not averted till the blood was mixed with an equal volume of a 1 in 1200 oxalate of ammonium solution. 21st: Coagulation time, 50 seconds. A 1 in 1500 solution was the minimum concentration of oxalate of ammonium which averted coagulation. 22nd: Coagulation time, 33 seconds. A 1 in 1500 solution of ammonium oxalate was the minimum dilution which sufficed to avert blood coagulation. 23rd: Coagulation time, 25 seconds. A 1 in 1200 solution of ammonium oxalate was the minimum dilution which sufficed to avert coagulation. 24th: Coagulation time, 30 seconds.

*Observation 4.*—F. A healthy man. June 19th, 1905:—1.5 P.M.: Coagulation time, 35 seconds. Coagulation averted when the blood was mixed with an equal volume of a 1 in 1800 solution of oxalate of ammonium. 4.15 P.M.: Four grammes of magnesium carbonate were ingested. 6.30 P.M.: Coagulation time, 35 seconds. Coagulation was averted when the blood was mixed with an equal volume of a 1 in 2500 solution of oxalate of ammonium. 20th: Coagulation time, 33 seconds. Coagulation was not averted until the blood had been mixed with an equal volume of a 1 in 1200 oxalate of ammonium solution. 22nd: Coagulation time, 35 seconds. Coagulation was averted when the blood was mixed with an equal volume of a 1 in 1500 oxalate of ammonium solution.

*Observation 5.*—C. A patient suffering from cystitis. June 13th, 1905:—4 P.M.: Coagulation time, 1 minute 40 seconds. A 1 in 900 oxalate of ammonium solution was the minimum dilution which averted blood coagulation. 4.20 P.M.: Four grammes of magnesium carbonate were administered. 5.30 P.M.: Coagulation time, 45 seconds. Coagulation was not averted until the blood had been mixed with an equal volume of a 1 in 750 solution of oxalate of ammonium.

## SUMMARY AND COMMENT.

**In the case of the experiments reported above which were conducted by administering in each case 60 grains of magnesium carbonate the blood coagulation time was accelerated—**

In Observation 1 from 2 minutes to 45 seconds—i.e., in the ratio of 1 to $\frac{1}{3}$.

In Observation 2 from 1 minute 5 seconds to 25 seconds—i.e., in the ratio of 1 to $\frac{1}{2.6}$.

In Observation 3 from 40 seconds to 25 seconds—i.e., in the ratio of 1 to $\frac{2}{3}$.

In Observation 5 from 1 minute 40 seconds to 45 seconds—i.e., in the ratio of 1 to $\frac{1}{2}$.

In Observation 4 the blood coagulation time, which was already very short, remained at 35 seconds.

**In the case of two of these observations the acceleration of blood coagulation time was registered in an hour from the time of administration of the drug. In Observations 2, 3, 4, and 5 distinct evidence was obtained of an absorption of magnesium salts into the blood.**

The evidence furnished above that magnesium salts exert when ingested an effect which is quite comparable to that exerted by calcium salts is exactly what might have been expected in view (*a*) of the close chemical affinities which obtain as between magnesium and calcium, and (*b*) of the original experiments of Arthus and Pagès, which showed that magnesium salts induced coagulation in oxalated blood *in vitro* in exactly the same manner as calcium salts. The disclosure of the effect which magnesium salts exert on blood coagulation is of therapeutic interest as explaining the *rationale* of the employment of magnesium carbonate in the treatment of urticaria and the special efficacy of the drug—as one of us has learned by experience on his own person—in the treatment of that form of urticaria which supervenes upon the ingestion of decalcifying agents. The specific remedial action here exerted is obviously not, as the pathology of a pre-scientific age assumed, the result of a neutralisation of acid properties in the blood, but the result of the replenishment of the blood with the salts which render the plasma coagulable and viscid.

From the study of the effect produced upon the blood by the ingestion of calcium and magnesium salts we pass on to study the effect which is exerted upon the blood coagulation by the ingestion of cow's milk. The line of thought which prompts to this inquiry will immediately suggest itself to the reader who is familiar with the observations made by one of us in conjunction with Knapp,[13] which show that the thrombosis which so frequently occurs in connexion with convalescence from typhoid fever almost certainly stands in relation with an excess of calcium salts furnished to the typhoid fever patient in the exclusively milk dietary which is so generally imposed upon him.

### COW'S MILK.

*Observation 1.*—H. K. A healthy medical student. May 15th, 1905:—Coagulation time, 2 minutes 22 seconds. A solution of 1 in 1800 of oxalate of ammonium added to the blood in equal volumes effected complete decalcification. Two pints of milk a day were now added to the dietary which remained in other respects unaltered. 17th: Coagulation time, 45 seconds. A solution of 1 in 1200 of oxalate of ammonium was required for complete decalcification. 18th: Coagulation time, 45 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 20th: Coagulation time, 30 seconds. A solution of 1 in 900 of oxalate of ammonium was required for complete decalcification. 22nd: Coagulation time, 50 seconds. A solution of 1 in 900 of oxalate of ammonium was required for complete decalcification. 23rd: Coagulation time, 1 minute. A solution of 1 in 900 of oxalate of ammonium was required for complete decalcification. 24th: Coagulation time, 30 seconds. A solution of 1 in 1500 of oxalate of ammonium was required for complete decalcification. 25th: Coagulation time, 20 seconds. A solution of 1 in 1800 of oxalate of ammonium was required for complete decalcification. 28th: Coagulation time, 45 seconds. A solution of 1 in 1200 of oxalate of ammonium was required for complete decalcification.

*Observation 2.*—B. A healthy medical student. May 17th, 1905:—Coagulation time, 1 minute 25 seconds. A solution of 1 in 900 of oxalate of ammonium was required for complete decalcification. Two pints of milk a day were now added to the dietary, which remained the same in other respects. 18th: Coagulation time, 45 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. 19th: Coagulation time, 45 seconds. Complete decalcification with a dilution of 1 in 900 of oxalate of ammonium. 20th: Coagulation time, 1 minute. Complete decalcification with a dilution of 1 in 800 of oxalate of ammonium. 21rd: Coagulation time, 40 seconds. Complete decalcification with a dilution of 1 in 800 of oxalate of ammonium. 24th: Coagulation time, 30 seconds. Complete decalcification with a dilution of 1 in 800 of oxalate of ammonium. 25th: Coagulation time, 35 seconds. Complete decalcification with a dilution of 1 in 1050 of oxalate of ammonium. 27th: Coagulation time, 30 seconds. Complete decalcification with a dilution of 1 in 750 of oxalate of ammonium. 29th: Milk left off. 31st: Coagulation time, 50 seconds. Complete decalcification with a dilution of 1 in 900 of oxalate of ammonium. June 6th: Coagulation time, 33 seconds. Complete decalcification with a dilution of 1 in 750 of oxalate of ammonium. 7th: Coagulation time, 30 seconds. Complete decalcification with a dilution of 1 in 750 of oxalate of ammonium. 10th: Coagulation time, 50 seconds. Complete decalcification with a dilution of 1 in 900 of oxalate of ammonium.

*Observation 3.*—L. A patient suffering from pleurisy with effusion. Feb. 10th, 1905: Coagulation time, 1 minute 20 seconds. Complete decalcification with a dilution of 1 in 800 of oxalate of ammonium. Two pints of milk were now added to the patient's dietary. 11th: Coagulation time, 1 minute 40 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. 12th: Coagulation time, 55 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. 13th: Coagulation time, 30 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. 14th: Coagulation time, 50 seconds. Complete decalcification with a dilution of 1 in 800 of oxalate of ammonium. 15th: Coagulation time, 40 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. 16th: Coagulation time, 45 seconds. Complete decalcification with a dilution of 1 in 800 of oxalate of ammonium.

**In addition to these observations, where the blood was examined both before and after the addition of milk to the dietary, we have made also a certain number of observations upon adults who happened to be taking a considerable quantity of milk and also upon infants. The data obtained in this manner are tabulated below.**

| Serial number of observation. | Description of patient. | Particulars with respect to amount of milk in dietary. | Minimum concentration of oxalate of ammonium solution required for complete decalcification of an equal volume of blood. | Coagulation time. |
|---|---|---|---|---|
| | | | | Seconds. |
| 4 | Phthisical patient. | 1 to 1½ pints of milk daily. | 1 in 1500 | 30 |
| 5 | ,, | ,, | 1 in 800 | 35 |
| 6 | ,, | ,, | 1 in 800 | 50 |
| 7 | ,, | ,, | 1 in 800 | 20 |
| 8 | Healthy man. | 1 pint of milk on 4 preceding days. | 1 in 800 | 30 |
| 9 | ,, | 1 to 2 pints of milk regularly. | 1 in 1500 | 35 |
| 10 | ,, | 1½ pints of milk regularly. | 1 in 1500 | 55 |
| 11 | ,, | 1 to 2 pints of milk regularly. | 1 in 1200 | 50 |
| 12 | Infant aged 6 months. | Dietary of cow's milk. | 1 in 600 | 25 |
| 13 | Infant aged 4 months. | Dietary of cow's milk and barley water. | 1 in 750 | 25 |
| 14 | Infant aged 4 months. | Fed on human milk supplemented by cow's milk. | 1 in 1200 | 37 |
| 15 | Infant aged 6 weeks. | Fed on human milk. | 1 in 750 | 30 |
| 16 | Infant aged 19 months. | ½ pint of cow's milk daily. | 1 in 900 | 25 |
| 17 | Infant aged 2 months. | Fed on human milk. | 1 in 600 | 25 |

[13] THE LANCET, Dec. 6th, 1902, p. 1531

## SUMMARY OF RESULTS AND COMMENT.

It will be seen that the above observations—which are in close agreement with those made by one of us in conjunction with Knapp on typhoid fever convalescents—show in a consistent manner that the coagulability of the blood is increased by the ingestion of milk, and that this increased coagulability is associated with the presence of large quantities of calcium and magnesium salts in the blood. It follows that milk is much more than a food-stuff. It is also in an eminent degree a medicinal agent. As such it may exert, according to circumstances, either a beneficial or a prejudicial effect. While advantage may accrue from the prescription of milk in connexion with hæmorrhage, aneurysm, physiological albuminuria, and the œdema of Bright's disease, it is practically certain that in many other cases the medicinal effect of milk is exerted to the prejudice of the patient. The importance of this aspect of the matter will not need to be enforced upon anyone who will let it come home to him that every patient—or rather let us say, every adult patient—who is placed on a dietary of milk is thereby brought into a condition which predisposes to thrombosis. We would throw it out as a suggestion that it would be profitable to make a systematic inquiry into the frequency with which thrombosis supervenes in hospital patients placed on a dietary of milk.

We pass now to the consideration of certain final points relating to the therapeutic exploitation of the medicinal agents which are available for increasing and diminishing the coagulability of the blood.

*Dosage to be employed where calcium or, as the case may be, magnesium salts are exhibited for the purpose of achieving as rapidly as possible a considerable exaltation of blood coagulability.*—The experiments which have been detailed above make it clear that a rapid increase of blood coagulability such as is desired for the arrest of actual or serous hæmorrhage can, unless in the case where we are dealing with a person who is defective with respect to his power of absorbing calcium salts, be achieved by the administration of a single 60-grain dose of either calcium lactate or, as the case may be, calcium chloride.

*Dosage to be employed where calcium salts are to be exploited for the purpose of maintaining a permanently high level of blood coagulability.*—Success in maintaining the blood coagulability at a high level involves adjusting successive doses of calcium salts in such a manner as to avoid introducing into the blood such excess of these salts as would effect a retardation of blood coagulation time.

*Observation.*—R. Healthy man. Feb. 23rd, 1905: Coagulation time, 1 minute 35 seconds. Complete decalcification with a dilution of 1 in 1800 of oxalate of ammonium. 15 grains of calcium lactate were given three times a day. 24th: Coagulation time, 30 seconds. Complete decalcification with a dilution of 1 in 1500 of oxalate of ammonium. 25th: Coagulation time, 35 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. 27th: Coagulation time, 35 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. 28th: Coagulation time, 25 seconds. Complete decalcification with a dilution of 1 in 1500 of oxalate of ammonium. March 1st: Coagulation time, 50 seconds. Complete decalcification with a dilution of 1 in 1000 of oxalate of ammonium. 2nd: Coagulation time, 47 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium. The drug was discontinued on the 3rd. 6th: Coagulation time, 55 seconds. Complete decalcification with a dilution of 1 in 1200 of oxalate of ammonium.

The next protocol we owe to Dr. George W. Ross. Dr. Ross kindly undertook to investigate here in association with the primary question at issue also the subsidiary question as to whether the presence of an excess of calcium salts in the blood would betray itself on examination of the patient's serum. It was a case of aneurysm of the arch of the aorta under the care of Dr. E. C. Beale.

*First period*, April 12th to 16th, 1905.—In this period, which preceded the administration of calcium salts, the patient's blood was tested on two occasions. The results of the blood examinations were as follows:—April 12th: Blood coagulation time, 1 minute 50 seconds. Concentration of oxalate of ammonium solution required for complete decalcification, 1 in 1350. 16th: Blood coagulation time, 1 minute 50 seconds. Concentration of ammonium oxalate required for complete decalcification, 1 in 1350.

*Second period*, April 18th to 25th, 1905.—During this period 20 grains of calcium lactate were administered three times a day. The results of the blood examinations made during this period were as follows:—April 19th: Blood coagulation time, 1 minute 20 seconds. Concentration of ammonium oxalate required for complete decalcification 1 in 1200. 21st: Blood coagulation time, 1 minute 25 seconds. Concentration of ammonium oxalate required for complete decalcification 1 in 1000. 23rd: Blood coagulation time, 1 minute 35 seconds. Concentration of ammonium oxalate required for complete decalcification 1 in 800. 25th: Coagulation time, 1 minute 50 seconds. Concentration of ammonium oxalate required for complete decalcification 1 in 1000. The patient's serum was now tested for calcium salts on the idea that these would when present in excess in the blood remain in solution in the serum instead of disappearing, as is normally the case, in the course of the chemical changes associated with blood coagulation. It was found in accordance with what was expected that the presence of calcium salts could be demonstrated in the patient's serum.[16]

*Third period*, May 1st to 13th, 1905. After an interval of four days, during which no calcium salts were exhibited, 20 grains of calcium lactate were again administered three times a day. The results of the blood examinations made during this period were as follows. May 2nd: Blood coagulation time, 1 minute 20 seconds. 4th: Blood coagulation time, 1 minute 15 seconds. 6th: Blood coagulation time, 1 minute 20 seconds. 9th: Blood coagulation time, 1 minute 35 seconds. 10th: Blood coagulation time, 1 minute 50 seconds. 12th: Blood coagulation time, 1 minute 50 seconds.

*Fourth period*, May 14th to June 24th, 1905. During this period ten grains of calcium lactate were administered three times a day. The following results were obtained. May 26th: Blood coagulation time, 1 minute. 30th: Blood coagulation time, 1 minute 15 seconds. June 3rd: Blood coagulation time, 1 minute 10 seconds. 10th: Blood coagulation time, 1 minute 20 seconds. 24th: Blood coagulation time, 1 minute 20 seconds.

*On the possibility of introducing calcium salts into the blood by hypodermic injection in the case where they are not absorbed when given by the mouth.*—Our personal experience of hypodermic injection of calcium salts in man is limited to a single case—that of a bleeder before referred to who appears to be incapable of absorbing any calcium salts administered by the mouth. The particulars given below represent the unfortunately in some respects incomplete observations which we were able to make (many of these observations were kindly made for us by Dr. J. B. Nias) upon this bleeder on four successive occasions when he presented himself, as is his wont, at this laboratory to see whether anything could be done for the relief of the hæmorrhages which, in his case, occur on each occasion from roots of the upper teeth.

*Observation 1.*—H. G., a man, suffering from hæmophilia. Feb. 8th, 3 P.M.: Coagulation time, 2 minutes 15 seconds. 3.10 P.M.: 4 grammes of calcium lactate were given by the mouth. 3.50 P.M.: Coagulation time, 2 minutes 15 seconds. No effect was exerted upon the hæmorrhage.

*Observation 2.*—Feb. 17th, 2.30 P.M.: Coagulation time, 2 minutes 50 seconds. 2.40 P.M.: 4 grammes of calcium lactate were administered. 3.25 P.M.: Coagulation time, 2 minutes 45 seconds. No effect was exerted on the hæmorrhage.

*Observation 3.*—Feb. 24th, 4 P.M.: Coagulation time, 2 minutes 50 seconds. 4.10 P.M.: Subcutaneous injection of 0·5 gramme of calcium lactate in 10 cubic centimetres of water. 4.55 P.M.: Coagulation times, 2 minute 10 seconds. No marked effect was exerted on the hæmorrhage.

*Observation 4.*—March 3rd, 2.10 P.M.: Coagulation time, 2 minutes 5 seconds. There was continuous hæmorrhage from the gums. 2.30: Hypodermic injection of 0·6 gramme of calcium lactate. 2.45: Hæmorrhage from the gums has ceased. 3.30 P.M.: Coagulation time, 40 seconds. 4.30 P.M.: Coagulation time, 35 seconds. March 6th: Coagulation time, 50 seconds. 16th: Coagulation time, 2 minutes 10 seconds.

In publishing this case we would venture to add a warning against employing calcium chloride for hypodermic injection and we would suggest that if the hypodermic injection of lactate of calcium is resorted to the maximum concentration of the drug employed should be a 1 in 20 solution.

*On the therapeutic measures to be employed for diminishing the coagulability of the blood and for maintaining a condition of diminished coagulability.*—It was pointed out a good many

[16] The method employed for testing for the presence of calcium salts in the serum was as follows. Two series of progressive dilutions of oxalate of ammonium were made up, the menstruum employed for the dilution being, in the one case, the patient's serum and, in the other case, a solution of chemically pure sodium chloride. The calcium salts of the observer's blood were now measured in duplicate, first with the one and then with the other series of progressive dilutions. The results obtained are exhibited in tabular form below:—

*Table showing the Concentrations of Oxalate of Ammonium which when Dissolved in Serum and Salt Solution Respectively Effected the Complete Decalcification of or (as the Case may be) just Failed Completely to Decalcify a Test Blood.*

| Date of examination. | Oxalate of ammonium dissolved in the patient's serum. | | Oxalate of ammonium dissolved in physiological salt solution. | |
|---|---|---|---|---|
| | Dilution which effected complete decalcification of an equal volume of the observer's blood. | Dilution which failed to effect complete decalcification of an equal volume of the observer's blood. | Dilution which effected complete decalcification of an equal volume of the observer's blood. | Dilution which failed to effect complete decalcification of an equal volume of the observer's blood. |
| 25/4/05 | 1 in 600. | 1 in 800. | 1 in 1350. | 1 in 1500. |

It will be seen that more concentrated solutions of oxalate of ammonium in the patient's serum were required to effect the same decalcifying effect which was exerted by less concentrated solutions of oxalate of ammonium in a menstruum of sodium chloride. The difference must be ascribed to the presence of calcium salts in the patient's serum.

years ago by one of us that it was possible to decalcify the blood and diminish blood coagulability by the administration of citric acid. The practical importance of this therapeutic measure in connexion with the treatment of thrombosis was further pointed out by one of us in conjunction with Knapp in a paper already referred to. We come back upon the subject here to supplement what was said in the paper last referred to in the light of experience recently gained in connexion with the examination of certain cases of hæmorrhage into the vitreous which were under the treatment of Mr. Leslie Paton in the out-patient department of this hospital. After it had been ascertained by a blood examination that the coagulation times of these three patients were respectively 1 minute 10 seconds, 50 seconds, and 1 minute 35 seconds, citric acid was in each case prescribed with intent to reduce the blood coagulability and to keep it throughout the course of the treatment at a low level. In each case the former but not the latter object was achieved. In the first case the coagulation time was reduced within a week to 2 minutes 25 seconds and was maintained at that level or thereabouts for a further month. But after this time, in spite of the fact that the citric acid had been persisted in throughout, the blood coagulation time came up to 1 minute 37 seconds. In the second case exactly the same thing happened. Under the influence of the citric acid the blood coagulability diminished step by step until the coagulation time reached 2 minutes 25 seconds six weeks after the inception of the treatment. Within the next month, in spite of the fact that the citric acid was still persisted in, the coagulability increased step by step till the coagulation time reached 55 seconds. In the third case the event was also the same. After a month's exhibition of citric acid a blood coagulation time of 2 minutes 40 seconds was reached. Within the next fortnight the coagulation time diminished to 55 seconds and continued high from this date. The interpretation of these facts is for the present obscure. It would, however, appear from the data obtained by the measurement of the calcium salts of the blood in these cases that the decalcification of the blood which is achieved by the exhibition of citric acid is followed after an interval by an increase in the calcium salts of the blood. This last may very probably depend upon the bringing into solution again of calcium salts precipitated and eliminated from the blood by citric acid but not excreted.

## A CASE OF DIVER'S PARALYSIS,

### WITH HISTOLOGICAL EXAMINATION OF THE SPINAL CORD.

BY W. HALE WHITE, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN TO, AND LECTURER ON MEDICINE AT, GUY'S HOSPITAL;

AND

F. A. BAINBRIDGE, M.D. CANTAB., D.SC. LOND.,
GORDON LECTURER IN EXPERIMENTAL PATHOLOGY AT, GUY'S HOSPITAL.

THE patient, a man, aged 38 years, was admitted into Guy's Hospital on Dec. 20th, 1893, suffering from loss of power in the legs and sleeplessness. He was a professional diver for wrecks. He had taken up this occupation when he was 23 years of age, at which time he was capable of obtaining a depth of 50 feet and he could now reach 160 feet. He said that he had often suffered from what he called the "bends," by which he meant a transient paresis. This would come on after any depth over 80 feet but it soon passed off; at the same time he suffered from some dropping of the feet and weakness in the wrists. He first noticed sleeplessness after working in deep water nine years previously to admission. Nothing that he had ever taken relieved this. He had tried opium, bromides, and chloral. This loss of sleep was sometimes so severe that he had to give up work. The longest attack lasted three weeks. He said that many divers suffered from it; the older they were or the deeper they went the worse it was. His first attack of loss of power in the legs occurred four years previously and he was then admitted into Guy's Hospital under the care of Dr. P. H. Pye-Smith. At that time he had, three months before admission, been suddenly attacked directly upon coming up from a depth of 150 feet, feeling numbness of the feet and of the inner side of the legs and having difficulty in walking. He remained in the hospital for about three months and went out quite well. His hands on that occasion were not affected Since that attack he has been more than ever subject to the "bends" and when this was severe not only was there the paralysis of the feet and hands already described but he suffered much from "pins and needles." This latter sensation has been very painful; it was experienced by the patient shortly after his coming to the surface and it passed off in a few hours. The weakness of the hands and feet which accompanied an attack of the "bends" was not severe enough to prevent him from soon returning to work. Therefore these attacks of the "bends" were regarded by him as being different from the severe attacks of paralysis. His present and second attack of long-lasting paralysis had come on 12 weeks previously to admission after working at a depth of 162 feet. As he was getting up the last rung of the ladder into the lighter he felt that he had lost power in his feet and he could only walk with difficulty; his feet and hands were numbed but the hands were only slightly affected; both feet and hands also suffered from the sensation of "pins and needles" and he felt sick. Two weeks later severe sleeplessness began and he said that that had continued until the present time in spite of large doses of drugs. During the 12 weeks he had not laid up; the loss of power in the legs had, however, got a little worse but that in the hands had remained about the same and was altogether slight. The patient could only walk with great difficulty and he had no sensation in the feet.

On admission the patient was found to be a huge, strong, well-built, very muscular man, weighing 18 stones. He said that he had had a very rough life and had suffered from scurvy, gonorrhœa, and syphilis. His feet were dropped and there was considerable loss of power below the knee for both flexion and extension. Along the inner side of both legs there were numbness, slight loss of tactile and thermal sensibility, and difficulty in telling heat from cold. Above the knees the sensation was normal. The knee-jerks and plantar reflexes were normal. There was some weakness of the hands. After diving he, like many others, often had bleeding from the nose and ears and noises in the ears and great pain there unless he swallowed frequently. He left the hospital on Jan. 8th, 1894, at his own request; he was very much better and could walk fairly well. At no time was there any evidence of wasting of the muscles. The maximum girth of the right leg was 16½ inches and that of the left 15¼ inches. The patient said that an electric current caused him some pain and therefore the reaction of the muscles could not be satisfactorily tested.

The patient was readmitted into Guy's Hospital on Feb. 2nd, 1905, for weakness in the legs and cough. He said that three weeks previously, when working on a trawler sunk off the coast of Jersey at a depth of 130 feet, he became entangled in the nets of the vessel and he was in the water for an hour and 20 minutes before his friends could get him up, by which time he was unconscious. On regaining consciousness in about ten minutes he had pain in the abdomen and was sick. On attempting to stand he found that his legs were very weak and he had a pricking sensation in the palms of his hands and in the soles of his feet. He had a curious sensation as though he was raised two or three inches off the ground and, to use his own words, he thought he was standing on holly. This sensation passed away on his lying down. He went home and remained in bed for three weeks and, as his legs did not get any stronger, he came to the hospital and was admitted.

On admission the patient's walk was slow and laboured, his feet were dropped, his muscles generally were weak, but especially so were those of the lower extremities. It required only a moderate amount of force to prevent him from bending his knee. His grip was weak. There was no wasting of the muscles anywhere. His tactile sensation seemed intact and also his sensation of cold but that of heat was deficient; the knee-jerks were absent, the plantar reflexes were flexor, and the pupils were normal. The rest of the case may be summed up by saying that the weakness of the muscles gradually got better but that the cough got worse. Physical signs developed in the chest, the liver was felt to be enlarged, and the diagnosis was made that the patient was suffering from pulmonary tuberculosis and cirrhosis of the liver. He lingered on until April 11th. A post-mortem examination was held on the next day and both lungs were found to be extensively affected with tuberculosis; the liver was cirrhotic.

The brain and spinal cord were removed from the body about 24 hours after death and they appeared normal to the naked eye. The cord was hardened for six weeks in a mixture of 3 per cent. bichromate of potassium and 10 per cent. formalin; pieces from different levels of the cord were imbedded in paraffin. The staining methods used were those of Marchi and Weigert Pal; aniline blue-black was also employed. The white matter showed no morbid changes either by Marchi's method or by the Weigert Pal method. Throughout its entire length the periphery of the white matter presented a vacuolated appearance; this was due, however, to post-mortem changes. As regards the grey matter, a large number of sections from different parts of the cord were examined; many of them were cut serially. They appeared to show that the cells in the lumbar region were fewer in number than usual; the deficiency was most marked in the case of the large cells of the anterior horns. The cells which were present looked healthy, the only exception being that some who saw the sections thought one or two cells showed slight necrosis. The perivascular spaces in the lumbar region were larger than those in the thoracic or cervical regions. Since sections from all parts of the cord were treated in precisely the same way, the larger perivascular spaces in the lumbar region could not be due to shrinkage of the vessels. There was definite thickening of the small arteries in both the grey and the white matter; the patient had been a drinker. No hæmorrhages were observed. Sections of the cord were shown at a meeting of the Neurological Society on June 24th, 1905. Although there was some difference of opinion regarding the importance to be assigned to the appearances just described, the majority of those who examined the sections considered that in the lumbar region the perivascular spaces were enlarged.

The investigations of Leonard Hill show clearly that if animals are subjected to a pressure greater than one atmosphere, a large amount of nitrogen is dissolved in the blood, according to the law of solution of gases; if the pressure is

A micro-photograph of a section through the lumbar region of the spinal cord. The perivascular lymph spaces in the grey matter are seen to be much distended.

allowed rapidly to return to the normal this gas is set free in the vessels and may even escape into the perivascular spaces. There is no doubt that the symptoms of diver's paralysis are in the same way due to the evolution—when the sufferer suddenly comes from the abnormally high to the usual atmospheric pressure—of the excess of gas dissolved in the blood in the vessels of the spinal cord.

There is no need for us to give the literature of the subject, for that has been recently fully done by Leonard Hill[1] and Leonard Hill and J. J. R. Macleod.[2] In the latter paper a list of fatal cases will be found. With regard to our own patient we do not think that his paralysis was due to alcoholic neuritis, for when one of us saw him on each of his admissions to the hospital he had none of the tenderness and wasting characteristic of this disease. Nor, strictly speaking, is the case to be regarded as a fatal case of diver's paralysis, for the patient died as a result of pulmonary tuberculosis. But it does illustrate admirably the power of recovery, for although there is no doubt that each of the attacks of paralysis after diving was due to the escape of gas bubbles into the blood-vessels and tissues of the spinal cord yet at death three months after the last attack but little change could be seen in the cord. The escape of gas could not have led to any destruction of nerve cells for no degenerated fibres were to be seen, and for this reason, if there was an unusually small number of cells in the lumbar spinal cord it cannot have been due to their destruction; at the most the evolution of gas may have left some permanent distension of the perivascular spaces. The formation of gas bubbles in the spinal vessels and their escape into the perivascular spaces on the arrival of the patient from a great depth interfered with the circulation through the cord so as to lead to paralysis; as the gas became absorbed the transient damage to his nervous tissues recovered, taking a few weeks to pass away. This is what usually happens, for the disease is rarely fatal; it will be remembered that our patient recovered from several attacks.

We record this single case because the opportunities of post-mortem examinations in cases of diver's paralysis are scanty. Probably the opportunities will become fewer still now that it is known that the disease can be prevented by slowly lowering the pressure when the workman comes out of the high pressure.

[1] Influence of Atmospheric Pressure on Man, THE LANCET, July 1st, 1905, p. 1.
[2] Caisson Illness and Diver's Palsy, Journal of Hygiene, vol. iii., No. 4, 1903.

## A CASE OF ANENCEPHALIC MONSTER.

BY R. H. PARAMORE, M.D. LOND.

ON Feb. 8th, 1905, I was called to a case of labour. I was told that the child was born but that it had some peculiar condition of the head. On my arrival I found a full-term anencephalic fœtus lying on the bed. It was quite still and made no attempt to breathe. The cord had been tied and severed and in the stump I felt the pulse beating slowly but with full volume; in a short time it ceased.

The illustration will show the condition better than I can describe it. Other than the head the fœtus was well formed. The arms and legs were big and strong, the shoulders were broad, and, I was told, they caused some delay in delivery. The fœtus was a male, the scrotum was large, a testis was present on each side, but the penis was small and diminutive. The nails had grown to the tips of the toes and fingers. The head consisted of an apparently normal base. The skull cap, above a line drawn around the cranium at about the level of the superior curved line of the occipital bone and continued forward along a line just above the zygoma to the superciliary ridges of the frontal bone in front, was

Showing appearance of the child.

entirely absent, its place being taken by two or three bulbous tumours in which no pulsation was felt. These were of unequal volume, but all of the same semi-solid consistence, of black colour, and covered with a shining membrane which was not skin, but which was continuous with the skin all around the cup-shaped rim of bone resulting from the absence of the skull top. These masses were irregular in size and the largest was on the right side of the head. They were attached by their bases to the base of the skull where the sella Turcica could easily be distinguished between them by the finger. On re-examination 12 hours later these black masses had lost their tenseness

and now felt like flaccid bags with semi-fluid contents. Behind, the lower part of the occipital bone was present, covered by skin and hair, but it ended above in a rounded horizontal edge which passed forward each side to the superciliary ridges of the frontal bone. The vertebral column was natural.

The prominence of the eyeballs was the most characteristic feature of the face. The upper and lower lids were bulged outwards over the globe, the palpebral fissures being about normal. This prominence was due to the fact that the orbital plates and external angular processes of the frontal bone had not grown forward to cover in the eyes; indeed, in the specimen these parts of the bony skull seem to be entirely wanting. This lack of development in turn is due to the absence of the frontal lobes of the brain which normally as development continues push the developing bone in front of them. Measurement shows very well the antero-posterior shortening of this part of the skull; whereas the fronto-occipital and the suboccipito-frontal diameters in normal children at term average respectively four and a half and four inches, the distance in this specimen between the root of the nose and the uppermost part of the occipital bone behind measures only two and a quarter inches.

The ears were large and coarse. They stuck out from the head and were placed about an average distance behind the eyes. The profile illustration shows the relation of the face to the rest of the head. The body was photographed lying quite flat on a table, so that none of the occiput was hidden in a recess. The fœtus weighed seven and a half pounds.

The mother was 20 years of age. She lived in the country and came to London for the confinement. Her last period commenced on March 18th and ended on March 23rd, 1904, since when she saw nothing. Previously to this she had been quite regular every month and was generally poorly for six days. The pregnancy apparently was uneventful, except that she had a fright from a dog. This occurred in October and reckoning the beginning of the pregnancy to date from the first period missed (April) this happened in the sixth month, at far too late a period of gestation to account for the maldevelopment. Otherwise, she had little morning sickness and worked up to Dec. 23rd. I am unable to state whether there was hydramnios in the case, for those present at the birth were unable to give any definite information on this point. The patient herself was not well developed mentally and was rather stupid. The puerperium was uneventful.

Gordon-square, W.C.

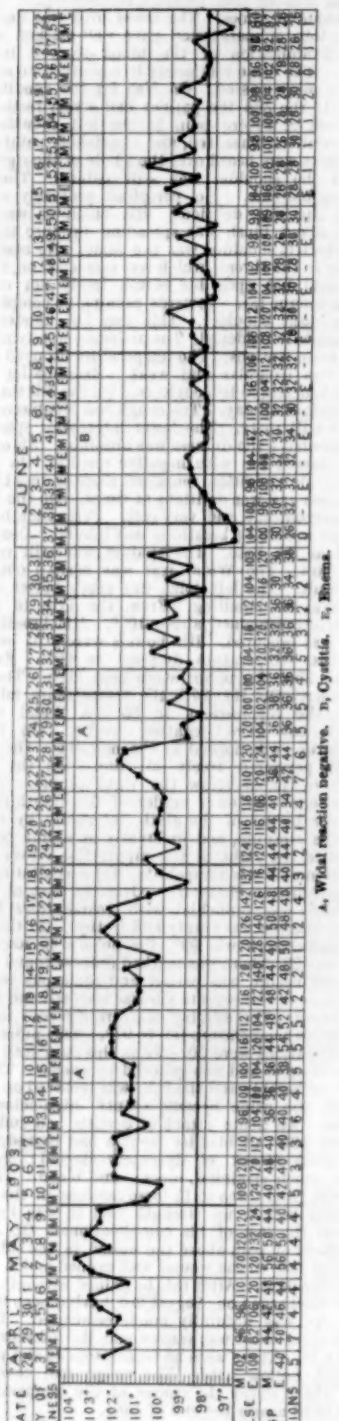
## NOTES ON A CASE OF TOXIC OR TYPHOID PNEUMONIA.

BY A. M. ELLIOT, M.B., C.M. EDIN.

THE following notes are from a case of lobar pneumonia occurring in a native ward boy working in the local hospital. First the daily clinical notes will be given and any comments will be made at the end.

The patient was a tall, strong, wiry man, about 35 years of age. He was admitted into hospital on April 28th, 1903. For the previous ten days or so he had been in attendance on several cases of pneumonia. On the 26th he said that he felt tired and had a slight catching pain at the right base if he took a long breath. On the 27th he had a slight cough and was unable to continue his duties. He was taken in on the morning of the 28th. On admission the temperature at 9 A.M. was 103·6° F., the pulse was 102, and the respirations were 40. He complained of much pain over the right side of his chest. He had a short, hacking cough, with scanty tenacious sputum slightly streaked with blood. The tongue was thickly coated. The eyes were bright. The spleen was normal. Resonance was somewhat impaired over the right base. A faint pleuritic rub was heard over the sixth, seventh, and eighth intercostal spaces posteriorly and laterally. A few râles were heard at the right base. The percussion note was slightly duller than that on the left side. He vomited twice during the day and had five loose yellow offensive motions. On April 29th the rusty sputum was more abundant. The dulness at the right base was marked; also bronchial breathing. The patient still complained of pain. Friction sounds were heard over the middle lobe. He vomited several times and had seven loose motions for the day. On the 30th he had passed a restless night. He was slightly delirious at times. The lower lobe was quite dull. The middle lobe on percussion gave well-marked Skodaic resonance. Examination of the blood showed increased leucocytosis. The urine was acid; it contained no albumin. Four motions were passed. On May 1st the condition was the same. On the 2nd the patient had a very restless day. He complained of severe pain in the left shoulder-joint, which was swollen, tense, red, and exquisitely painful when touched. Râles were heard over the whole of the right lung. On the 3rd the shoulder was still painful. The cough was very troublesome. He perspired profusely all day. On the 4th he was delirious. His shoulder was much swollen and a red blush was spreading up into the neck. On the 5th the left shoulder was the same. He complained of much pain in the throat, which was increased on swallowing. He could not open his mouth freely nor could he protrude the tongue far. Towards evening he complained of pain in the right shoulder. This was hot, tender to the touch, and slightly reddened. The abdomen was tympanitic; he had five loose motions. The temperature dropped to 100°. The pulse was irregular and weak. Examination of the blood showed increased leucocytosis. On the 6th the patient was very delirious all day. The cough was troublesome; the sputum was still rusty. The lower intercostal spaces were bulging somewhat; the dulness was absolute. An exploring needle was passed but with negative results. On the 7th, 8th, and 9th his condition remained more or less the same. He was restless and was delirious at times. On the 10th the pulse was intermittent and very soft. Percussion below the right clavicle was dull; breathing was tubular. Coarse râles were heard at the base. The sputum was still rusty but more abundant. The Widal test was carried out with a negative result. The left joint was much better and was not so painful on handling. From the 11th to the 17th the temperature remained above 100°. His breathing was faster but less laboured. His bowels were still loose. On the 18th the temperature dropped to 99°. From the 19th to the 23rd the temperature kept high. The bowels became looser. On the 24th the temperature fell to 99° again and the respirations to 35. A Widal test was carried out but gave negative results. On the 25th the temperature was normal in the morning. On the 27th the patient perspired freely all day. On the 30th he complained of pains below the right nipple. A patch, limited above by the lower border of the fourth rib, below by the upper border of the sixth, internally by the right border of the sternum, and externally by a line one and a half inches to the right of the nipple line,—over this area the percussion note was tympanitic. On auscultation breathing was amphoric in character. Over the rest of the lung the breathing was bronchial with coarse râles here and there. The sputum was scanty and frothy. On the 31st the morning temperature was 99°, the pulse was 104, and the breathing was 36. There was marked dulness round the base. An exploring needle was passed and some pus was drawn off. A portion of the seventh rib was resected and 12 ounces of pus escaped. The evening temperature rose to 101·8°. On June 1st his temperature fell to 97°. The pulse was 104 and the respirations were 30. From this date until the 15th he was constipated and was relieved by enema. The wound progressed favourably and the tube was removed on the 20th. On the 5th the urine became scanty, high-coloured, and ammoniacal. An acute attack of cystitis had suddenly set in. By the 18th all bladder trouble had ceased. On the 24th an acute attack of dysentery started; there were great pain, much straining, mucus, and blood. This lasted 18 days, with from three to 11 loose motions in the 24 hours. He gradually picked up strength and it was hoped that he had seen the last of his complications. On July 15th he complained of pain above the wound in the side. There were signs of pus, so the wound was opened and a tube was left in for five days. After this he gained strength and was eventually discharged on August 3rd, having been in hospital 99 days. He was naturally much emaciated. The upper part of his right chest was sunken and the intercostal spaces were drawn in. There were no breath sounds and percussion gave a dull, hollow note. The cough had ceased. The appended chart shows the course of the temperature from admission until nearly the end of June.

The above case presents many points of interest. The first diagnosis was that of lobar pneumonia. In a few days the question arose whether it was not a case of typhoid fever




A, Widal reaction negative. B, Cystitis. E, Enema.

with pneumonia as its initial symptom. Such cases do occur. There is, perhaps, a history of a rigor and next day we have a typical pneumonia which is really only the commencement of a case of typhoid fever. These cases are called pneumotyphus by the Germans. A symptom in favour of typhoid fever was the persistent diarrhœa. In pneumonia it is more usual to find the bowels constipated. The old theory that typhoid fever was unknown amongst the natives of India could not help here. I have had several cases of enteric fever amongst natives. On May 2nd—i.e., the seventh day of the illness—another complication arose. An acute arthritis of the left shoulder-joint had supervened. This favoured the first diagnosis, for though one does see an arthritis complicating a case of typhoid fever, yet it is so rare, as compared with its occurrence in pneumonia, that one was forced to place it on the side of pneumonia, which led to the thought that here we were dealing with a case of toxic pneumonia. On the tenth day of illness there was a pseudo-crisis but the true crisis did not occur and the disease went on. On the fifteenth day of illness the Widal test was carried out; also on the twenty-ninth. Both gave negative results. On May 21st the patient was tapped and eight ounces of clear serous fluid were withdrawn. On the 25th his temperature fell to normal but rose in the evening and kept on rising and falling until the 31st. On the 27th he began to perspire freely and on the 30th pus was found in the thoracic cavity. Resection was performed on the 31st. After this we find him with an acute cystitis and an acute attack of dysentery.

*Bacteriology.*—As regards the blood there was increased leucocytosis throughout. This became more evident about May 27th. Pneumococci were found in the blood. Fraenkel's pneumococci were also found in the serous fluid drawn off on May 21st; also in the pus, but here mixed with other cocci. The pneumococcus was also found in the urine. All the above facts prove that the case was one of a severe pneumococcus infection—in other words, an acute toxæmia caused by Fraenkel's pneumococcus.

I saw the man in 1904 and again recently. He was in good health. If anything the right side of his chest is flatter than the left. The breath sounds are also much feebler over the region of the upper and middle lobes anteriorly. He has had no lung trouble, however, since his discharge. He has attended his work regularly for the past 15 months.

Champion Reef, Mysore State, India.

## INFLAMMATION OF THE PHARYNGEAL TONSIL.

BY P. McBRIDE, M.D. EDIN., F.R.C.P. EDIN., F.R.S. EDIN.,
CONSULTING SURGEON, EAR AND THROAT DEPARTMENT, ROYAL INFIRMARY, EDINBURGH.

WHEN a patient suffers from hypertrophy of the pharyngeal tonsil, be it marked or not, he may have periodic attacks of the familiar kind known as cold in the head. If the posterior nares be examined during one of these exacerbations the adenoid tissue of the naso-pharyngeal vault is seen to be further enlarged, congested, and secreting mucus freely. This is a condition which is familiar to every rhinologist and to many general practitioners. It is therefore not my intention to dwell further upon it. The matter to which I desire to call attention is the occasional occurrence of a condition similar to what is generally known as lacunar and follicular tonsillitis in the pharyngeal tonsil. So far as my memory serves me I have only seen two typical instances of this affection. In the first case the patient, a schoolboy, was brought to me by his mother. He had complained of sore-throat but as inspection of the fauces revealed nothing abnormal his trouble had been made light of. When I saw the lad it struck me that he looked ill. His temperature was found to be 101° F. and on inspection of his naso-pharynx there were seen spots of white material varying in size and resembling in all respects the appearances met with in the faucial tonsils when affected with follicular inflammation.

Probably on account of its rarity this affection has not

been emphasised in modern text-books. Thus Schech[1] mentions that there may be plugs of cheesy material or that the mucosa may take on a speckled appearance from suppuration of the follicles. The description given in my own work[2] is very similar. Gottstein and Kayser[3] suggest that the affection may only be considered rare because of the difficulties presented by examination of the naso-pharynx. Their short account of it does not, however, differ from that given in the two works previously referred to and the same applies to Chiari[4] who also dismisses the subject in a few lines. Moritz Schmidt[5] seems never to have satisfied himself of the existence of follicular inflammation of the pharyngeal tonsil. "It [the pharyngeal tonsil]," he writes, "appears only to be involved in the acute form (i.e., without exudation); cheesy plugs I have only seen in a very few cases. It is certainly conceivable, and, indeed, probable, that it may also be attacked by the lacunar form, but in acute inflammation sensibility is so increased that one can rarely complete an examination. In the comparatively few cases in which I have rhinoscoped I could discover no exudation." Schmidt, then, is evidently inclined to look upon naso-pharyngeal tonsillitis as a complication, or shall we say associate, of inflammation of the faucial glands. Were it only to occur in this connexion there might be difficulty as to its diagnosis, but the illness of the patient could easily be explained. It is, however, a different matter when there are a complaint of sore-throat, a high temperature and pulse, and at the same time little or nothing to be seen on inspection of the pharynx. Of course, rhinoscopic examination would reveal the cause, but the peculiar circumstances in which such cases are usually seen often prevent this method of diagnosis. In the first place when a patient is attacked by sore-throat and fever he usually sends for a general practitioner. Now posterior rhinoscopy requires for its successful performance a good deal of practice, and it is therefore quite possible that the medical attendant might be unable to resort to it had he the necessary apparatus at hand. Even if an expert be called it is no easy matter for him to see the posterior nares of a patient who is confined to bed and whose throat is often excessively irritable. For these reasons I am inclined to agree with Gottstein and Kayser[6] that the affection we are considering may really be much more common than it is assumed to be.

I have recently met with a case which illustrates the occurrence of inflammation of the exudative type almost entirely confined to the naso-pharynx. The patient, a young woman, aged 25 years, felt her throat sore and complained of shivering on the evening of Saturday, June 24th. I examined her on the afternoon of the following Monday. Her pulse was 120 and her temperature was 103° F. On inspecting her pharynx there was very little to be seen to account for the general condition. The tonsils were slightly enlarged and on the right there was a mere trace of exudation. The patient, a very intelligent girl, stated that she felt more as if the discomfort was behind the palate. On practising posterior rhinoscopy I was amazed to see the vault covered by a pultaceous grey material, looking like a thick sloughy false membrane and concealing not only the choanæ but the Eustachian orifice as well. Anterior rhinoscopy revealed nothing abnormal. I directed the patient to go to bed and ordered nasal syringing with a mixture of boric solution and peroxide of hydrogen, while aspirin was given internally. The tongue was furred and as the bowels were constipated a purgative was prescribed. For two days the pulse and temperature remained the same but on the third day both were approximately normal. During the time the fever lasted the patient complained of pains in the back and limbs but the joints were not tender. There were only very occasional twinges of earache. A swab from the throat gave a pure culture of staphylococcus. Even two days after convalescence was established I was able to demonstrate a quantity of exudation upon the pharyngeal tonsil and to some extent it was still present 48 hours later.

It does not seem to me that this case requires special comment. The onset and the acutely sthenic fever made me fairly confident that I had not to deal with diphtheria, although the extensive membrane formation was suggestive of that disease. All doubt was, however, set at rest after the bacteriological report. I should imagine that such a very large formation of false membrane as occurred in this case must be exceptional. As before stated, it seemed to cover the whole pharyngeal vault and concealed both choanæ and Eustachian tubes. Indeed, it looked more like an extensive sloughy ulceration than anything else.

My object in publishing this short note is to make practitioners aware of the occasional occurrence of naso-pharyngeal tonsillitis without any marked participation of either the anterior nares or the pharynx proper. A knowledge of this fact may in certain cases throw light upon the cause of febrile attacks, the etiology of which would without examination of the naso-pharynx remain undiscovered.

Edinburgh.

[1] Die Krankheiten der Mundhöhle, des Rachens und der Nase, fifth edition, p. 128.
[2] Diseases of the Throat, Nose, and Ears, third edition, p. 319.
[3] Heymann's Handbuch der Laryngologie und Rhinologie, vol. ii., p. 498.
[4] Krankheiten des Rachens, 1903, p. 177.
[5] Die Krankheiten der Oberen Luftwege, third edition, p. 273.
[6] Op. cit.

## DISTENSION OF THE GALL-BLADDER SIMULATING OVARIAN CYST.

BY JOHN A. C. KYNOCH, M.B. EDIN., F.R.C.P. EDIN., F.R.C.S. EDIN.,
PROFESSOR OF GYNÆCOLOGY AND OBSTETRICS AT THE UNIVERSITY OF ST. ANDREWS.

ALTHOUGH ovarian cysts have been mistaken for almost all forms of abdominal tumour, perhaps the most seldom giving rise to doubt in diagnosis are those originating in the splenic or hepatic regions. This is doubtless due to their point of origin and lower border being usually readily made out. Both conditions have, however, been recently reported upon. In the *Journal of Obstetrics and Gynæcology* for February Dr. F. E. Taylor reports two cases where enlarged wandering spleens simulated ovarian tumours and he refers to other recorded cases of a similar nature. In the June number of the same journal Dr. T. G. Wilson reports a case of hydatid cyst of the spleen resembling an ovarian cyst. Recently Mr. Alban Doran has discussed the condition of dilatation of the gall-bladder simulating ovarian cysts. He reports the case of a woman, aged 50 years, who had a tender, elastic tumour on the right side between the hypochondrium and the groin. There was a distinct area of resonance between its upper border and the liver. It was fairly moveable in all directions and could be displaced downwards so as to reach Douglas's pouch. Operation proved it to be a distended gall-bladder of about the size of a cucumber. It contained many gall-stones and the cystic duct was obstructed by a large stone. The case was successfully treated by "ideal" cholecystotomy. Mr. Doran discusses similar cases hitherto reported, of which the most interesting are those of Lawson Tait, Kocher, and Osler. In Tait's case the abdominal tumour, due to a distended gall-bladder, presented all the physical signs of a parovarian cyst for which it was mistaken. In Kocher's case, which was sent into hospital as an ovarian cyst, the tumour was of the size of a man's head and was fairly moveable, so that its lower pole could be pushed down below the level of the pubes. In the case reported by Osler the distended gall-bladder was found fixed to the right broad ligament. In addition to the cases referred to by Doran, Schulerin[1] reports a case of distended gall-bladder of the size of an eight and a half months' pregnant uterus removed from a woman, aged 40 years, on account of peritonitic symptoms. The tumour reached into the pelvis, the uterus lying behind it. Lastly, a case of the same nature has been reported by Mr. J. Basil Hall[2] where the symptoms pointed to those caused by torsion of the pedicle of an ovarian cyst.

The following case which has recently come under my observation, although previously to operation it presented signs pointing to a moveable cystic kidney yet to a certain extent simulated an ovarian cyst, and for that reason I report it as an addition to already recorded cases of enlarged cystic gall-bladder forming an abdomino-pelvic tumour in women.

Dr. A. Dickson, house surgeon at the Dundee Royal Infirmary, reports the case as follows. The patient, aged 41 years, had been married for 13 years and had had six children and one miscarriage. Menstruation had been

[1] Centralblatt für Gynäkologie, 1901.
[2] Brit. Med. Jour., June 24th, 1905.

regular. She had had rheumatic fever seven years ago and a year before admission to hospital she was confined to bed for six weeks for what she described as catarrh of the stomach. After her recovery from this illness she complained of pain in the back and for the first time noticed a swelling on the right side of the abdomen. There was no history of jaundice. On examination the patient was rather thin and nervous looking. Beyond some frequency of micturition the urinary and other systems were normal. On inspecting the abdomen, otherwise flat, a prominent swelling could be made out on the right side, its centre being slightly below the level of the umbilicus. It was tender, smooth, elastic, but not fluctuating. There was a distinct area of resonance between its upper border and the lower margin of the liver. The percussion note was dull over the tumour which was extremely moveable in all directions. On pushing it downwards its lower border reached almost to the level of the pubes. The uterus and appendages appeared to be normal. The abdomen was opened by a vertical incision over the most prominent part of the swelling. The right kidney was found to be normal and the tumour proved to be a distended gall-bladder, retort shaped, and of about the size of a cocoanut. Into its upper part there ran a very thin flap of liver tissue, while its lower border was round and free from adhesions. On opening the tumour pale fluid escaped. The cystic duct was blocked by three faceted calculi. These were removed along with the greater part of the cyst wall, the remaining portion being sutured to the parietal wound and drained. A week after operation bile escaped from the wound which is now completely closed.

In this case the absence of a history of jaundice, accounted for by the cystic duct alone being obstructed, the area of resonance at the upper border of the tumour, along with the fornices being free of anything suggesting a pelvic origin, pointed to the condition being renal rather than connected with the gall-bladder or ovary.

Dundee.

## A METHOD OF STERILISING SPONGES.

BY F. W. ANDREWES, M.D. OXON., F.R.C.P. LOND.,
PATHOLOGIST AND LECTURER ON PATHOLOGY, ST. BARTHOLOMEW'S HOSPITAL, ETC.

A YEAR or more ago I published, in conjunction with Dr. K. J. P. Orton, the results of a study of the disinfectant action of hypochlorous acid.[1] In that paper we showed that in the absence of easily oxidisable organic matter hypochlorous acid is one of the most intense germicides known, even anthrax spores being killed in one minute by a 0·01 per cent. solution. In the presence of much organic matter the pure acid is comparatively inert but we described a combination of ammonium persulphate with hydrochloric acid in which practical advantage may be taken of the high activity of hypochlorous acid as a disinfectant, even in presence of moderate amounts of organic matter. It is to this combination that I wish to draw attention in connexion with the sterilisation of sponges.

The credit of first devising, for practical use in surgery, a highly active combination of hydrochloric acid with an oxidising agent belongs to Krönig and Paul.[2] The mixture which they recommended—a 1 per cent. solution of potassium permanganate to which 1 per cent. of strong HCl has been added—will kill anthrax spores in 30 seconds and is certainly a skin disinfectant of the highest efficiency. Its staining properties are, however, very inconvenient and it was in order to obviate this objection that Dr. Orton and I experimented with the persulphate of ammonium. This salt, $(NH_4)_2S_2O_8$, forms a colourless solution in water and on adding to the solution strong hydrochloric acid the latter is oxidised but much more slowly than by the permanganate. The exact mixture which we advocated is made up as follows: 37 grammes of ammonium persulphate are dissolved in 950 cubic centimetres of pure distilled water and 11 cubic centimetres of strong hydrochloric acid are then added. When first made up the mixture has no very extraordinary germicidal powers, but in the course of a few days these become very pronounced and when six days old it will kill anthrax spores in less than one minute. It retains its efficiency for many weeks. It is a perfectly clear, colourless solution, with no staining powers and no injurious action on the skin, though it may fix blood stains in the crevices of the nails. It was as a skin disinfectant that we chiefly suggested its use, and I have successfully employed it as such for some time. Mr. W. Bruce Clarke, who tried it for a time in his surgical practice, had on one occasion some eczema of the hands after he had been operating for a whole afternoon, but others have not had this experience.

But whether or not the persulphate mixture proves a suitable skin disinfectant I feel very sure after several trials that it is one of the best and speediest means for sterilising sponges which can be found. I have subjected it to tests far more severe than any which can occur in actual practice. I will describe one which I recently carried out. I obtained from the operating theatre an old sponge which had been discarded because it had become discoloured. It was taken to the post-mortem room and soaked in blood and fæces; in this state it was left all night. Next morning I poured over it a quantity of sewage which had been standing in a bottle in the laboratory for a fortnight and which was in a highly offensive condition. Finally I added an emulsion of hay bacillus spores, which are much more resistant than those of anthrax. I now cleansed the sponge mechanically under a hot water tap, scrubbing it two or three times in succession with soap. After five minutes it appeared clean. I squeezed it out once or twice in the persulphate mixture, which had been made up four days previously, and then placed it in a large beaker of the mixture so that it was completely covered. After an hour I cut off two large pieces and placed them in sterile broth, using, of course, sterilised instruments for the purpose. I changed the broth an hour or two later to make sure of getting rid of all traces of the disinfectant, though this was hardly needful, as the organic matter of the broth rapidly decomposes the hypochlorous acid. After four days' incubation at blood heat both tubes remained absolutely sterile. More than this, I left the sponge soaking in the persulphate mixture for four days and at the end of that period it came out beautifully bleached and looking like a new sponge. Nor were its texture and elasticity in any way impaired. This is only one out of several similar experiments which I have performed on sponges and it will be admitted that it can hardly have been exceeded in severity.

Some of the methods in common use for the preparation of sponges for surgical purposes occupy several days. By this method they can be sterilised with certainty in an hour, whereby considerable economy in the stock of sponges required can be effected. Moreover, discoloured sponges can be bleached and renovated. For this latter purpose a sojourn of two or three days in the mixture is requisite. For mere sterilisation an hour is ample; the sponges should then be rinsed in sterile water and stored in carbolic solution. This is advisable because the persulphate does exercise a certain injurious effect on their texture. I find that if they are kept soaking in the mixture for three or four weeks they become softened and eventually disintegrate, hence the shorter the sojourn at each sterilisation the longer will be the life of the sponge.

I would emphasise two facts in connexion with this method. First, the persulphate mixture should have been made up at least four days before use but preferably not more than a month. Secondly, the method does not do away with the necessity for preliminary mechanical cleansing of the most thorough kind to get rid of all fibrin and other organic matter in the interstices of the sponge. The expense of the method is slight—a gallon of the persulphate mixture costs less than a shilling.

The marine sponge is so superior in absorbent power to its substitutes that any method which seems likely to insure its sterility should be welcome to surgeons and at least worthy of trial. This is my reason for publishing the foregoing note.

Pathological Laboratory, St. Bartholomew's Hospital.

[1] Centralblatt für Bakteriologie, vol. xxxv., pp. 645 and 811.
[2] Zeitschrift für Hygiene, vol. xxv., p. 73.

UNIVERSITY OF OXFORD.—Mr. C. G. Douglas, B.A., Magdalen College, has been elected to a senior scholarship for University students at Guy's Hospital; Mr. M. W. Flack, B.A., Keble College, to a Price (Universities) scholarship at the London Hospital; and Mr. J. F. Hornsey, B.A., Wadham College, to a Universities exhibition at Charing Cross Hospital.—Professor Osler will commence his course of instruction introductory to the study of practical medicine on Monday, Oct. 16th.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### GASTROTOMY FOR REMOVAL OF A FORK.

BY J. A. LOWRY, M.B., B.CH. R.U.I.,
ASSISTANT MEDICAL OFFICER OF THE CITY OF LONDON ASYLUM, DARTFORD.

ON Sept. 15th a male patient, not previously suspected of suicidal tendencies, pushed a fork, handle foremost, down his throat whilst at dinner. Medical assistance was at once summoned and the fork was easily detected lying in his stomach. On the following day the patient was anæsthetised. A four-inch incision was made in the middle line of the epigastrium and the handle of the fork was drawn gently into the abdominal wound; the stomach wall was caught with forceps and an incision made over the foreign body which was then extracted. The gastric wound was closed with two layers of silk sutures; there was little hæmorrhage and the patient made an uninterrupted recovery. The fork was eight inches long and one inch broad. It is interesting to note that the annual report of the Commissioners in Lunacy for this year contains an account of the death of a patient through having swallowed a fork five and a half years previously. I was assisted in the operation by Dr. R. H. Steen, the medical superintendent, whom I have to thank for permission to publish the above case.

Dartford.

### NITRITE OF AMYL IN GYNÆCOLOGY.

BY C. F. A. MOSS, M.D. EDIN.

TWO cases have occurred recently in my practice which illustrate the efficacy of nitrite of amyl in internal hæmorrhage.

CASE 1. *Secondary hæmorrhage.*—The patient was a female from whom bilateral parovarian cysts had been removed on Nov. 19th, 1904. On the right side oozing was troublesome during the operation but it had been apparently quite checked before the abdominal parietes were sutured. However, the pulse, which at the end of the operation was 96, rose during the evening to 132 and was very weak, so that there was no doubt as to the fact of hæmorrhage having occurred. On reopening the abdomen, by which time the pulse had risen to 150, much dark blood with many clots gushed out but no active hæmorrhage was detected anywhere. A gauze plug was inserted. The pulse fell to 124 but before long there were again symptoms of hæmorrhage and a renewed rise in the pulse-rate. I decided to give inhalation of nitrite of amyl, the effect of which proved to be magical. In less than five minutes the pulse had gained in force and the patient had become stronger and calmer. Two capsules were used, after which she went to sleep, and there was no return of hæmorrhage. The change from a condition of apparent hopelessness, with the improbability of life being prolonged an hour, to one of fresh vigour was marvellous. The patient said that she had no recollection of anything until "something exploded"—the breaking of the capsule—but from that moment she felt life returning. The eventual recovery was good. The patient appears to be the subject of hæmophilia.

CASE 2. *Extra-uterine gestation.*—A patient was brought on April 22nd, 1905, with marked symptoms of internal hæmorrhage. The pulse was very small, with a rate of 132, and the heart beat was barely audible. Preparations were immediately made for operation but a capsule was given with a view of checking the hæmorrhage and of increasing the strength in the necessary interval. A certain improvement took place in the strength of the heart and the firmness of the pulse, and the operation was performed without further increase of symptoms. The gestation sac was found in the inner third of the right Fallopian tube and was of the size of a pigeon's egg. The rupture was very minute but the peritoneal cavity was full of blood. Of course, it was impossible to postpone interference in the hope of the nitrite stopping the hæmorrhage as the patient's state was already desperate. The recovery was satisfactory.

Antananarivo, Madagascar.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.**—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

## WESTMINSTER HOSPITAL.

### A FATAL CASE OF POISONING BY ACETIC ACID IN A CHILD.

(Under the care of Dr. PURVES STEWART.)

FOR the notes of the case we are indebted to Mr. J. R. Rigden Trist, house physician.

A child, aged one year and ten months, was taken to Westminster Hospital at 10.30 A.M. The mother said that the child had "swallowed some strong acid used for making vinegar." The child was breathing noisily and with some difficulty, the mouth and tongue were white and frothy, and the breath had an odour of acetic acid. Beyond this there were no signs and the child's general condition was fair. One and a half ounces of magnesia were given forthwith and the patient was admitted; she was put to bed and a steam kettle and tent were put up. There was some stridor, the posterior wall of the pharynx appeared to be œdematous, and the mouth was full of frothy mucus. The child could not swallow and rectal feeds were ordered. About 1 P.M. the stridor was much increased and the dyspnœa was more marked; there were cyano-is and inspiratory recession. A low tracheotomy was performed. The dyspnœa was relieved but the pulse was feeble, the colour was earthy, the eyes were sunken, and bronchitic sounds were heard all over the chest. Five minims of brandy were given and the general condition improved for some hours. Towards 4 P.M. the patient stopped breathing. Artificial respiration was employed, two minims of liquor strychninæ were given hypodermically, and the child was put in a mustard bath. Respiration returned and she improved again. About 7.30 her appearance was much worse; the colour was earthy, the eyes were sunken, and the respirations became shallow and frequent. Brandy was given and 20 grains of bicarbonate of potassium in sterilised water were run into the axillæ with a view to neutralising any acid absorption that might have taken place. Henceforward the child grew gradually worse and towards 10 P.M. was becoming so restless and feeble that $\frac{1}{75}$ grain of morphine was given with $\frac{1}{75}$ grain of atropine sulphate. About 10.30 the child stopped breathing; the pulse was imperceptible. Artificial respiration was employed and ether and strychnine were injected. A shallow respiration returned but the child rapidly sank and died at 11 P.M.

*Necropsy.*—A post-mortem examination was made by the coroner's order and took place 40 hours after death. There were rigor mortis, hypostatic lividity, and putrefaction. The body was that of a well-nourished female child, and beyond the tracheotomy wound and needle marks presented "no visible sign of external mechanical recent injury." The whole interior of the buccal cavity, the pharynx, and œsophagus showed superficial necrosis; they were covered by a whitish membrane which, in the œsophagus especially, could be readily stripped off, leaving a hyperæmic raw surface beneath. The stomach was not affected beyond a few white puncta present on the cardiac mucosa. There was œdema of the glottis and larynx. The left lung showed signs of recent acute bronchitis, the right of collapse; the latter condition was probably due to a pneumothorax consequent upon the tracheotomy. All the other organs were examined and found natural.

*Remarks by* Mr. RIGDEN TRIST.—This case has seemed to me to be of interest in that poisoning by acetic acid is an uncommon accident. The acid swallowed was not glacial and the child appears to have swallowed but a single mouthful. Three of the jurymen at the inquest told the coroner that it was no uncommon thing to use diluted acetic

acid as vinegar. The parents said that they used about a teaspoonful of acetic acid to a pint of water. Death appears to have been due to shock following the local injuries rather than to any absorption of the poison.

I have to thank Dr. Purves Stewart for permission to publish this case which was admitted under his care during the absence of Dr. W. Murrell.

## ROYAL HANTS COUNTY HOSPITAL, WINCHESTER.

### A CASE OF TRAUMATIC RUPTURE OF THE DUODENUM AND JEJUNUM; OPERATION; RECOVERY.

(Under the care of Mr. H. J. GODWIN.)

A MAN, aged 42 years, a cabdriver, was admitted into the Royal Hants County Hospital, Winchester, at 8 P.M. on August 26th last. His history was that half an hour previously he was getting on to the box seat of his four-wheel cab when the reins, which had been previously hitched up, fell on to the ground and the horse started off and bolted. He ran by the side to try to catch hold of the reins, holding on to the shaft but was knocked down in the attempt, both wheels of the cab passing over his body, the cab being full of people at the time. He was conveyed to the hospital and walked into the ward merely complaining of pain in the abdomen and back and said that he was only bruised. He was carefully examined by the house surgeon (Mr. F. Child) who could detect no signs of external or internal injury and it was with some persuasion that Mr. Child got him to remain in the hospital. He was put to bed, fomentations were applied to the painful parts, and orders were given that he was to be watched very carefully. His pulse on admission was 84 and of good volume and tension. The respirations were 20 and the temperature was 98·2° F. The nose and left forearm were slightly grazed. At 2 A.M. the next morning (the 27th) Mr. Godwin was sent for to see the patient as the abdominal pain had increased, vomiting had commenced, and there was some loss of liver dulness. On examination the man was found to be complaining of severe abdominal pain; he had vomited once and said that he still felt very sick. The abdomen was somewhat distended but moved with respiration. The respirations were hurried (44 per minute); the pulse was 96 and was in no way like a pulse of collapse; and the temperature was 98°. There were marked rigidity of the abdominal wall and marked tenderness on percussion; the percussion note was slightly dull in both flanks. There was loss of liver dulness in both the posterior and mid-axillary lines. The urine which had been drawn off was normal. There were no signs of fractured ribs or any other external injury. A diagnosis of ruptured intestine was made and immediate operation was decided on. A quarter of a grain of morphine was then given.

Chloroform was administered and the patient was prepared on the operating table. An incision eight inches long was made through the skin over the right rectus muscle, the fibres of the muscle were separated, and the peritoneum was opened. On opening the peritoneum blood-stained fluid with a fæcal odour flowed out. The whole peritoneal cavity was then found to be full of blood-stained fæculent fluid with particles of undigested food. A portion of the great omentum was found to be torn and bleeding; this was ligatured and the torn part was removed. The whole of the small intestines were then turned out into hot sterile towels and examined loop by loop. A transverse rupture was found in the first part of the jejunum on the anterior surface about three quarters of an inch long, starting from its mesenteric attachment. Some fæcal-stained fluid and undigested food were escaping from this rupture. On further examination another rupture was found in the last part of the duodenum on its anterior surface and the tear was about one inch long in the direction of the longitudinal axis of the gut, the visceral peritoneum around it being stripped off. Yellowish-stained fluid was issuing from this wound. There was also a good deal of bruising of various parts of the small intestine, the visceral peritoneum in some places being stripped off. The large intestines and other organs were found to be uninjured. The rupture in the duodenum was closed with sutures of fine silk by an inner continuous suture passed through all the coats of the gut and an outer suture, also fine silk, by Lembert's method. This rent being in the longitudinal axis of the gut the sutures were inserted as in the operation for pyloroplasty so as to avoid any subsequent constriction of the lumen of the gut. The rupture in the jejunum was closed with sutures of fine silk, by an inner continuous suture and an outer one by Lembert's method. The rent being in the direction of the circumference of the bowel it was stitched up in the opposite direction. The peritoneal cavity was then dealt with, being well washed out with quantities of normal saline solution at a temperature of 105°. The whole of the intestines were well flushed with saline solution and wiped over and returned into the abdomen. A Keith's drainage tube was inserted into the lower angle of the wound and passed down into the pelvis. The abdominal wound was closed with silkworm-gut sutures, taking up all the layers, two sutures being left untied in the lower angle of the wound where the tube was inserted. The wound was dressed with cyanide gauze wet with 1 in 4000 biniodide of mercury. The patient stood the operation fairly well. One grain of calomel every hour was ordered to be given as soon as the patient came round from the anæsthetic and to be continued for five hours and to be followed by an enema consisting of turpentine, half an ounce; castor oil, one ounce; and soap and water, one pint. This was given at 10 A.M., with a very good result. Morphine and atropine were occasionally given for pain during the first 24 hours. One grain of calomel hourly was continued off and on for three days and an enema was given every morning. Jaundice appeared on the second day after operation. There was considerable serous discharge from the Keith's tube the first two days. The tube was removed on the third day and the last two stitches were brought together. The wound had completely healed and the stitches were removed on the tenth day. The patient made an uninterrupted recovery and was discharged on Sept. 25th. With regard to the food taken by the patient before the accident, at 5 P.M., two and a half hours before, he stated that he ate a very large meal consisting of bacon, cold potatoes, cabbage, and bread, and drank three large cupfuls of tea. Between 6 and 7 P.M., one and a half hours before the accident, he drank two bottles of ginger beer; immediately before the accident he drank half a pint of stout.

*Remarks by* Mr. GODWIN.—My great fear after the operation in this case was paresis of the bowel, as besides the two ruptures in the intestine there was considerable bruising of the intestine and in some places the visceral peritoneum was stripped off. The evisceration and cleansing of the intestines necessitated a good deal of handling. Therefore, to try to avoid this condition, I gave one grain of calomel every hour immediately the patient came round from the anæsthetic. This was followed some hours afterwards by enemata and as a good action of the bowels was obtained by this method, it being a severe case and signs of distension and upward peristalsis continuing, the calomel was continued hourly and enemata were given every morning. The calomel was stopped on the third day, the patient having taken in all 30 grains. This leads me to add that for the past three years I have been in the habit of administering calomel in small doses immediately after all severe abdominal operations and I begin by giving half a grain or one grain directly the patient comes out of the anæsthetic. This is continued for ten hours and an enema consisting of turpentine, castor oil, and soap and water is then given; if this does not produce the desired result the calomel is repeated hourly for the next five hours and then the enema is repeated. I have never found this method fail, but if it did I should then give drachm doses of sulphate of magnesium until the bowels acted. The advantages that may be claimed for the administration of calomel in this way I consider are: (1) being tasteless it is very easily administered; (2) its action as an internal antiseptic is most valuable; (3) its action in small doses in preventing vomiting (I may mention in the above case that in spite of the patient not being prepared in any way for the anæsthetic he did not vomit once after the operation and I have noticed this in several of my cases); (4) its value for stopping and preventing hiccough; (5) its purgative properties; (6) its action on secretions; and (7) that in my experience after administering considerable quantities by this method I have never seen any poisonous or ill effects produced by the drug.

I believe Lawson Tait was the first to teach the advisability of getting the bowels to act early after abdominal operations, and I believe every surgeon of to-day recognises this fact; but I have seen many cases where purgatives and

enemata have been too late, paresis of the bowel with its disastrous results having got the upper hand. This led me to adopt in severe abdominal operations with much handling of the bowel the above method of treatment and I have never had cause to regret it. The appearance of jaundice on the second day, which soon disappeared, was interesting. The absence of shock from such a severe injury is most unusual.

# Medical Societies.

## MEDICAL SOCIETY OF LONDON.

*General Meeting.—Presidential Address.—Cerebral and Ophthalmic Complications in Three Cases of Sphenoidal Sinusitis.*

A GENERAL meeting of this society was held on Oct. 9th, Dr. C. E. BEEVOR, a Vice-President, being in the chair. The annual report of the council was read and adopted. Mention was made of the valuable services of the late Mr. W. R. Hall who had held the offices of registrar and librarian for many years. The Treasurer then presented his report and balance-sheet for the year ending Sept. 30th, 1905, which were duly adopted. Votes of thanks to the retiring President, Mr. John Langton, and the retiring Secretary, Mr. H. J. Waring, were passed.

The incoming President, Sir LAUDER BRUNTON, then took the chair and delivered his inaugural address which is given in full at p. 1087 of our present issue.

Dr. STCLAIR THOMSON read a paper on the Cerebral and Ophthalmic Complications in three cases of Sphenoidal Sinusitis. The frequent origin of intracranial complications from suppuration of the ear was now generally appreciated but a similar association had not yet been fully established between the brain and the nose. An analysis of 9000 necropsies at Guy's Hospital revealed 57 cases of intracranial mischief from ear disease, but Dr. G. Newton Pitt could only discover one case of cerebral abscess due to nasal suppuration. But in Dr. Thomson's view, if the accessory sinuses were more systematically examined in cases of intracranial inflammation, the former would be found a much more frequent source of the latter than was generally supposed. In fact, one observer who had systematically examined the accessory cavities in all necropsies had found suppuration in the nasal cavities in 30 per cent. Of the accessory sinuses the sphenoidal cavity seemed to be the most frequent source of cerebral trouble. Three cases of sphenoidal sinusitis were then narrated, two of them being followed by necropsies. Illustrations and temperature charts were exhibited. One of the cases was found to be an infection of the meninges from a long latent chronic sinusitis. In another case, that of a girl aged 16 years, the most prominent symptoms were double proptosis and chemosis. She had never had any suppurative or other discharge from the nose. Under an anæsthetic a large quantity of pus was evacuated from the nose and also from the orbits but the patient eventually died At the necropsy the cavernous and other venous sinuses were found to be the seat of infective thrombi. Reference was then made to the writings of Dr. R. Dreyfuss[1] and other authors. As the result of his search Dr. Thomson had collected 34 cases in which intracranial mischief had resulted from septic inflammation of the sphenoidal sinus. In 15 cases meningitis was the only or the predominant lesion. In three cases thrombosis of the cavernous sinus was the primary complication. In 11 cases, although the thrombosis was the principal lesion, it was associated with basic meningitis. Either thrombosis of the cavernous sinus or basic meningitis might result with nearly equal frequency as a complication of sphenoidal suppuration. Intracranial abscess was the chief lesion in two cases; meningeal septicæmia (a title given by Toubert[2] to cases where the anatomical changes were trifling or even entirely absent and where death was due to sphenoidal infection, generally occurring rapidly) was the chief lesion in two cases, and suppurative encephalitis in one case. In conclusion, Dr. Thomson discussed the symptoms of inflammation of the sphenoidal sinus, its causes, the bacteria found in the infective fluids, and its treatment. The necessity of complete and adequate drainage was emphasised and the best route for the drainage to be effected was discussed. Primary inflammation of the nasal sinuses was often overlooked and cases of secondary meningitis, really due to this, were often regarded as simple or primary conditions. In Dr. Thomson's opinion the sinuses should be examined as a routine practice in such cases.—Dr. BEEVOR referred to the case of a girl who was taken to the National Hospital for the Paralysed and Epileptic in a comatose condition. The diagnosis of sphenoidal sinus disease was not made during life. The nasal cavity had not been examined.—Dr. HERBERT TILLEY congratulated Dr. Thomson on directing attention to these important matters. The thorough examination of nasal cavities was not very easy. The symptoms were often surprisingly few. Even when headache was complained of it was usually in the occipital region. A small bead of suppuration might often be seen pulsating in the roof of the nose on to the front wall of the sphenoid. It was very easy to open the front wall of the sphenoidal sinus but extremely difficult to keep it open.—Dr. R. H. SCANES SPICER referred to the methods of examining the sphenoidal sinus. In doubtful cases a thorough examination should be made under an anæsthetic by passing the finger into the posterior nares to aid in the direction of the probe or catheter.—Dr. J. DUNDAS GRANT agreed that the situation of the pain was no guide as to sinus disease. The finding of pus in the sphenoidal sinus after death was not always an indication that it was originally formed there. But undoubtedly disease really originating in this sinus was frequently overlooked. A method of dealing with sphenoidal sinusitis was to remove the floor of the cavity, in which case the opening was more permanent.—Mr. W. H. H. JESSOP had noticed proptosis in all the cases which he had observed and he would like to know whether the protrusion of the eyes was directly forward or forward and downward in direction.—Dr. THOMSON replied.

[1] Die Krankheiten des Gehirns und seiner Adnexa im Gefolge von Nasenciterungen: G. Fisher, Jena, 1896.
[2] Archives Générales de Médecine, vol. clxxxvi., 1900, p. 385.

## OBSTETRICAL SOCIETY OF LONDON.

*Carcino-Sarcoma Uteri.—Ectopic Gestation.—Exhibition of Specimens.*

A MEETING of this society was held on Oct. 4th, Dr. W. R. DAKIN, the President, being in the chair.

Dr. HERBERT R. SPENCER read a paper on Carcino-Sarcoma Uteri, in which he said that the name "carcino-sarcoma" had been given to cases in which cancer and sarcoma coexisted side by side in the same uterus and that of sarcoma carcinomatodes to cases in which a malignant growth was partly cancerous and partly sarcomatous in structure. A case of carcino-sarcoma was described. It occurred in the uterus of a sterile married woman, aged 44 years. Vaginal hysterectomy was performed; recurrence took place within two months of the operation. In the case described the two growths occupied the body of the uterus and differed markedly in appearance to the naked eye. Under the microscope the cancer was a typical glandular carcinoma; the sarcoma was of the small round-celled variety. Abstracts were given of a few similar cases which had been published. The published details were too meagre to give a complete clinical picture of the disease, which appeared to resemble simple cancer of the body in usually affecting sterile patients after the menopause. The sarcoma usually arose in the endometrium and was lobulated, often polypoid, and, by comparison with cancerous growths, smooth upon the surface. Dr. Spencer had met with the coexistence of sarcoma and cancer once out of about ten cases of sarcoma of the uterus and believed, with Gusserow and Opitz, that a careful examination of all cases of sarcoma would prove that the association was less rare than would appear from the number of published cases.—Dr. W. S. HANDLEY suggested that the association of sarcoma with carcinoma might be due to the simultaneous invasion by a parasite of both the epithelial and the connective tissues. But it seemed more probable that any lump in the uterine wall, whether simple or sarcomatous in character, might occasionally so irritate the endometrium as to cause a cancer, in much the same way as a carious tooth might cause epithelioma of the tongue. He suggested that in the specimen shown the sarcoma might have originated from a fibro-myoma.—Dr. SPENCER, in reply, said that he

thought it probable that the sarcoma had origin in a fibroid and it was possible, though by no means certain, that examination of additional sections might determine that point.

Captain J. C. HOLDICH LEICESTER, I.M.S., recorded a case of Ectopic Gestation which apparently ruptured twice. A Hindustani female, aged 35 years, was admitted to the Eden Hospital, Calcutta, on account of severe pain in the left side of the lower abdomen following two missed periods. She was detained for nine days and then discharged. But two days later she had an acute attack of pain in the lower abdomen on the left side and said that she fainted. When readmitted a cystic tumour of the size of a large orange was found to the left of, and behind, the uterus. The abdomen was opened and a distended left Fallopian tube and clots were removed. The patient made an uninterrupted recovery.

Mr. H. J. PATERSON described a case of Extra-uterine Gestation with Operation during the Sixth Month of Pregnancy. The patient, a woman, aged 32 years, after three months' amenorrhœa suffered from pain in the lower abdomen and metrostaxis. The case was diagnosed on admission to hospital as one of ruptured extra-uterine gestation with pelvic peritonitis. But after a few days the patient's condition rapidly improved, the internal bleeding apparently ceased, and all pain disappeared. The lower abdomen was occupied by a globular tense elastic swelling which continued slowly to increase in size. The last normal period had ceased on Jan. 12th, 1903. On July 22nd the abdomen was opened in the middle line. The swelling, apparently situated in the right broad ligament, was separated from adherent intestines and incised; the placenta was found on the front and upper wall of the sac. The deeper portion of the placenta was slightly detached. The placenta was rapidly separated and a living fœtus removed. The fœtus weighed 11½ ounces and measured nine and a half inches; it died a few minutes after removal. The free hæmorrhage was controlled temporarily by packing the sac with dry gauze. After a short interval the gauze was removed and the sac irrigated with hot water. Many bleeding points were clamped and ligatured. About two pints of fairly recent blood clot were removed from the bottom of the sac, but much laminated clot was left as it was densely adherent. The sac was secured to the lower end of the abdominal wound and its cavity was packed with sterilised gauze. Severe vomiting followed. On the third evening the patient's condition seemed desperate. As a last resort three grains of calomel were given, followed in a few hours by a turpentine enema. Relief followed. The patient made a tardy convalescence. The sinus into the sac persisted for over a year, ligatures being discharged from time to time.—Mr. ALBAN DORAN considered that packing the sac and ligaturing its vessels were often unavoidable. Unfortunately the ligatures were likely to become infected, especially when the gestation sac was of the posterior tubo-ligamentary type, in which case the deeper part of the sac was formed by the walls of the large intestine.—Dr. A. L. GALABIN thought that a great advantage was gained if it was in any way possible to remove the whole placental site. In a recent case operating at about the fifth month and about a week after the death of the fœtus he had found it possible, by commencing the separation on the unaffected side, removing the whole uterus, and tying both uterine arteries before interfering with the sac, to remove entire the adherent fœtal sac, including the whole broad ligament in which it originated. The result was that the hæmorrhage was controlled after the ligature of the uterine and ovarian arteries, an aseptic field was obtained, the abdomen was closed without drainage, and the patient recovered rapidly without any disturbance.—Dr. AMAND ROUTH considered that packing the sac with gauze was almost invariably followed by infection of the ligatures and a resulting sinus. He thought that calomel was more likely to succeed than morphine in the treatment of the severe vomiting.—Mr. PATERSON, in reply, said that complete removal of the sac was impossible in this case owing to extensive adhesions between the intestines and the outer wall of the sac. The use of ligatures was rendered necessary by the large size of the bleeding vessels in the placental site. He believed that the old blood clot at the bottom of the sac became infected owing to its close proximity to the rectum.

Dr. GALABIN showed a Dermoid Cyst of the Ovary, four and a half inches in diameter, the pedicle being only one-sixteenth of an inch in diameter. The pedicle tore through as the mass was being raised and showed no visible vessels. No ligature was required either for the pedicle or adhesions. There was no history or appearance of torsion.

Dr. GALABIN also showed a specimen of tubal abortion which was produced by bimanual examination. It was associated with a trivial amount of hæmorrhage only and was accompanied by no distinctive symptoms.

Mr. FRANK E. TAYLOR showed a Fibromyomatous Tumour undergoing aseptic necrobiosis, or red degeneration. The uterus also showed evidence of recent pregnancy. He expressed an opinion that the part played by pregnancy in the production of this condition was less than often stated.—Mr. ALBAN DORAN remarked that pain without hæmorrhage or discharge was a well-recognised symptom indicating necrotic change in uterine fibroids.

Dr. A. W. ADDINSELL showed the uterus from a tuberculous subject, aged 53 years. Microscopic examination showed tubercles extending from the cervix to the fundus.

---

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Oct. 6th, Dr. J. S. Risien Russell, the retiring president, being in the chair. After his induction to the chair Mr. W. Campbell M'Donnell thanked the society for the honour conferred upon him by electing him president for the session and delivered his address on Medical Heresies. He said that the heresies were his own, not the dogmatic utterances of confidence but rather earnest questionings after knowledge emphatically put that being opposed might call for energy that should determine either the falsity of his propositions or by further argument establish them. Gout, he said, was usually believed to be due to the ingestion of a larger quantity of nitrogenous food than could be disposed of by the individual either because of the chief excretory organ, the kidney, being cirrhotic, or the function of metabolism hindered through excessive alcoholic ingestion or the lessening of the alkalinity of the serum, so that less uric acid could come into solution. While he did not deny that an excessive ingestion of nitrogen or chronic alcoholic excess would induce gout he considered that these causes were less frequent than was usually believed. Further, those explanations did not account for attacks of gout following slight mental shock, or moderate local injury that induced local gout later, to be repeated in quick succession in different distant joints. Such cases he believed were due merely to a disturbed metabolism having a central cause and were not due to a mere excess of intake over possible output for the individual. Shock, general or local, mental or physical, might determine gouty arthritis. Rather this condition was symptomatic of a similar underlying state to that of glycosuria. He did not believe that oxaluria or phosphaturia could be directly influenced either by diet or drugs. He believed that treatment of the whole by strychnine or bromide and by leaving the part to be self-righted was a more useful line to adopt. If "indigestion," according to the patient, were left undieted and undrugged and the patients were put in the laughing-room, the string-quartette room, or given the moonlight repose, better results would follow than from the administration of "foods" and pepsine with bismuth and soda. He doubted every sign of dyspepsia except considerable flatulence personally observed, water-brash or a coated tongue not due to anything else one could accuse. The flatulence might be merely intestinal rumbling due to too lively bowels. The abdomen "blown out like a drum" he had seen as a consequence of diaphragmatic cramp. There might be twitching of muscles, as the orbicularis oculi or finger flexors, with the abdominal pain called dyspepsia. It then was necessary to determine whether this twitching was related to the abdominal pain very indirectly and secondarily, or concurrently, and symptomatic on the motor side as the pain was of the sensory side of the nervous system. For this condition food, sunshine, and rest were required, even though food by the mouth invariably produced pain. "Aching kidney" was taught by the late Matthews Duncan and apparently he was no great believer in "floating kidney" as a cause of pain in the neighbourhood of the kidney. He said that replacing and permanently fixing the kidney by suture did not by any means necessarily prevent the pain. If the pain were due to a misplaced kidney producing tension in the ureter or veins this should speedily yield to a correct position of kidney and relapse with a renewed malposition; but such was not the case. It need not be mentioned there perhaps that the testes were "floating"—that is, they had

much mobility and were subject to non-inflammatory pain—yet they never heard such pain being set down to "floating testis." From the fact that these attacks of pain in the kidney area occurred frequently at the menstrual period they seemed to be entitled to say that they were due to the menstrual disturbance or one similar. What local condition led to such pain or even where the locality was he did not know. Yet it might be mentioned that the application to the parietal region of the skull of a continuous current of between two and five milliampères for five minutes had done more good than drugs either by the mouth or hypodermically for severe cramp or pain alone in the lower extremity. He questioned whether it were not far too much the routine to prescribe drugs and doubted whether it were not often the case that they defeated their own ends by giving the patient towels wherewith to dry, whereas the essential was not to become wet. He said that his experience of the outdoor treatment of consumption was that the gain, when any, did not last more than six weeks after a return to the usual surroundings. Could the personal element in any disease be measured? It must be candidly answered, No. On that account alone their work must always be an art, though based on science. The man who could best detect signs and disorder, measure the person, and grasp the essential line of treatment was he who could most relieve distress. Treatment was nearly always a roundabout attack; with the exception of the supplying of saline fluid after hæmorrhage they could only treat symptoms or remove results of disease. Not even in the antitoxin treatment did they get at the prime cause. Bearing this in mind it would be well if in many instances they more enforced an all-round regard for the patient and put but little reliance on drugs, remembering that when any fine adjustments were required if they improved the whole the whole would include the part in such a manner that no attempted direct means applied now could effect.

SOCIETY FOR THE STUDY OF INEBRIETY.—A meeting of this society was held in the hall of the Royal Medical and Chirurgical Society's House, 20, Hanover-square, on Oct. 10th, Dr. Harry Campbell, the President, being in the chair.—Professor T. D. Crothers delivered the first Norman Kerr Memorial Lecture. All scientific pioneer work, he said, brings into prominence two distinct classes of leaders, those who go far beyond the present ranges of their subject and are commonly treated with indifference or denounced as cranks, and those who work beyond the frontier of the present but always remain in close touch with that frontier. They organise fresh truths, materialise new and old theories, and direct public attention towards them. Dr. Norman Kerr belonged to this second class. His life and work were devoted to the promotion of the scientific study of inebriety. To consider inebriety as a disease was a very ancient view, but the first distinct study of inebriety was made by Dr. Rush of Philadelphia in 1809. Other investigators followed with essays and papers, but not until 1844, when the British Lunacy Commission spoke of inebriety as a disease, did this subject attract any particular attention. Dr. J. E. Turner, an American, next organised an inebriate asylum at Binghampton, New York, which was opened in 1863. This was the first institution of its kind in the world and the first scientific effort to demonstrate that inebriety was to be treated as a morbid condition. It attracted a great deal of attention and was the centre of much opposition and controversy. The influence of this institution extended to all civilised countries and in England led to the formation of a committee of inquiry in the House of Commons to consider the best plan for securing the care and control of habitual drunkards. Bitter controversy followed and it was at this point that Dr. Norman Kerr took up the work. Born in Glasgow in 1834, he graduated at that University in 1861. Previously to this he had had large experience as a journalist and after his graduation he served for many years as a surgeon on the Allan line of steamers. He was a practical temperance man in his early life and on coming to London in 1874 he took up the subject of the scientific study of inebriety and its treatment in suitable institutions, and was a most enthusiastic student in this new field of activity until his death in 1899. He early became a keen worker in the promotion of legislation for the care and control of habitual drunkards. He was not only energetic in inspiring others and uniting leaders in the profession to influence Parliament to enact laws for the organisation of institutions with legal measures for control, but he succeeded in establishing the Dalrymple Home which was opened in 1884. Later he continued to be very active in advocating the legal control of all institutions for the care of inebriates. In 1884 he founded the Society for the Study of Inebriety and was its President until his death. That body had been a very prominent factor in turning public opinion towards the scientific study of the subject. Its proceedings had been numerous, widely spread, and copied, and had formed public opinion to a large degree. In 1887 Dr. Norman Kerr organised and conducted an international congress for the study of inebriety. Prominent men from many countries read papers and discussed the subject for two days; this gave it a position in the scientific world which did much to change public sentiment and to overcome considerable opposition. Two years later Dr. Kerr issued a work on "Inebriety: its Pathology and Treatment," which had been a recognised authority on this subject up to the present time. Its particular value was in the general treatment of the subject, giving a masterly survey of the whole field without exhausting any particular phase. Dr. Kerr was a very voluminous and graphic writer and as a leader of men he possessed the rare faculty of stating his own views and conclusions in a manner that neutralised all opposition—if he did not always convince his hearers and those who differed from him he invariably secured their respect. He was a man of great ability as an organiser and knew how to direct his own studies as well as those of others and so arrange the facts of science that they would appeal to the largest number of persons and rouse an interest to make further inquiries. In all his books and papers the necessity for a scientific study of the alcohol problem was urged in the most practical way and along eminently conservative lines. While broad and liberal in his recognition of facts he never advocated extreme theories or urged irrational measures but always sought the most practical means and methods. His real work was in gathering up the facts concerning inebriety and materialising them into practical legislation and institutions and presenting them in literature—work which had made it possible to understand the inebriate and in some measure neutralise and prevent the evils. He set men thinking, turned the tide of philanthropic temperance work into new and broader channels, giving it a new vitality and a fresh direction, the result of which was already felt in all the civilised world.—A vote of thanks to the lecturer was proposed by Sir Victor Horsley and seconded by Mrs. Scharlieb, M.D.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Oct. 6th, the President (Mr. L. A. Bidwell) being in the chair. Mr. Bidwell delivered the presidential address on the Progress of Intestinal Surgery. After a brief review of the history of the surgery of this region, in which he gave an account of the almost accidental, but successful, resection and suture of a piece of intestine by Ramdohius in 1727, he pointed out that the advances made during the past 30 years were so extraordinary that they seemed almost beyond belief and he traced these advances to the advent of anæsthetics, the work of Lord Lister in the field of antiseptic and especially of aseptic treatment of wounds, an improved knowledge of the anatomy and physiology of the organs contained in the abdomen, which showed to what a great extent they might be interfered with without damaging the health of the patient, and lastly, the discovery that with cleanliness it was by no means dangerous to open the peritoneal cavity, but that the rapid manner in which peritoneal surfaces adhered to one another, and the way in which it was able to deal with even a considerable amount of even semi-purulent fluid, entitled it to be called rather the surgeon's friend than his enemy. Another thing which had contributed to progress had been the recognition of the proper methods of suturing gut and the President paid a fitting tribute to the work in this direction of Lembert and Halsted. Reference was also made to the ease with which hæmostasis was now obtained by Spencer Wells forceps and the methods of combating shock by means of saline injections and heated operating tables, both of which were of no small assistance to the abdominal surgeon in attaining his present good results. In the course of a rapid review of the present achievements of the surgeon in the abdomen it was noted that two former Cavendish lecturers of the society had been the means of making epoch-making advances, the late Professor Mikulicz having been the first in 1880 to operate successfully for perforating gastric ulcer; while Sir Frederick Treves in 1887 first recommended the removal of the appendix during the

interval between two recurring attacks.—A hearty vote of thanks to the President was proposed by Dr. W. Culver James and seconded by Dr. H. Campbell Pope. This was carried by acclamation and the proceedings then terminated.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held in the Faculty Hall, Glasgow, on Oct. 6th, when Dr. J. Lindsay Steven delivered his presidential address. His subject was "Morgagni to Virchow: an Epoch in the History of Medicine." The following are brief headings of the lecture: The value of medical history. The epochs of medical history in the Christian era: (1) the epoch of Galen (131–200 A.D.), the Græco-Arabian supremacy; (2) the epoch of Mundinus (1275–1326), "the restorer of anatomy"; (3) the epoch of Vesalius (1514–65), downfall of the Græco-Arabian supremacy; (4) the epoch of William Harvey (1578–1657), the circulation of the blood; (5) the epoch of Morgagni (1682–1771); the state of medicine immediately preceding Morgagni; the schools and systems; Sydenham, Baglivi, Boerhaave; the life and work of Morgagni; the contemporaries of Morgagni (Haller, the Hunters, Cullen, Auenbrugger); the successors of Morgagni in France (Bichat, Laennec, Bayle, and others), in England (Baillie, Richard Bright, Addison), in Germany (Schleiden, Schwann, Virchow); the cellular pathology; "Morgagni und der anatomische Gedanke."

GLASGOW SOUTHERN MEDICAL SOCIETY.—The session of the above society was opened on Oct. 5th by an address from the President, Professor R. Stockman of the University of Glasgow, on Heredity in Disease.

# Reviews and Notices of Books.

*The Treatment of Nervous Disease.* By J. J. GRAHAM BROWN, M.D. Edin., F.R.C.P. Edin. London and Edinburgh: William Green and Sons. 1905. Pp. 464. Price 15*s.* net.

THE author in his preface explains that the framework of this book consists of certain lectures delivered in the Royal Infirmary of Edinburgh, and though some few have already appeared in the *Scottish Medical and Surgical Journal*, we are told that by far the greater portion of the book is new and is now published for the first time. This explanation is necessary, because the pliant and colloquial diction of the lecture has been adopted throughout. There can be no doubt that these lectures will serve a useful purpose if the limitations of treatment are duly recognised. Too much cannot be expected in the treatment of organic lesions by medicinal methods, but, on the other hand, it must be remembered that in the most hopeless cases some measure of relief can frequently be afforded. A certain cheery optimism is likely to help the patient more than an ultra-scientific gloom based upon a recognition of pathological changes of structure. Optimism forms the keynote of these lectures and it is conveyed so pleasantly and is supported by so many instances from the author's experience that the reader is carried along by the apparent ease of treatment when conducted upon a rational and scientific basis. This basis is the belief that the physiological function of the particular part of the nervous system which in each case happens to be affected determines the variety of treatment required. The various nervous diseases have accordingly been grouped upon a physiological plan, although it has been clearly recognised from the outset that this must involve an occasional lack of accuracy.

The opening chapter deals with prophylactic measures to prevent the occurrence of diseases of the nervous system, and this is of great importance, since by early recognition of the predisposing causes much may be done to avert trouble both with neurotic children and with adults of neurotic stock. The conditions resulting from the various toxins, from morphine, from alcoholism, and from syphilis are next considered and the treatment recommended appears adequate and up to date. The electrical treatment of the different forms of peripheral paralysis and the further advantages to be derived from massage, exercise, and gymnastics are discussed fully, while, as is fitting, briefer mention is made of the various surgical measures which have been advocated. Much space is devoted to paralysis of the upper motor neuron and recent medical literature has been carefully kept in view. The author states that the method of sudden and forcible reduction of spinal curvature is "not correct in theory and works badly in practice." Dr. Graham Brown is equally severe in his condemnation of the numerous operative measures which have been suggested for the treatment of cases of pure idiopathic epilepsy; presumably he is prepared with chapter and verse for the list of operations given on p. 228, which if "somewhat amusing" is much more than "a little sad." Chorea is placed among the irritative diseases of the upper motor neuron and, while the usual predisposing or exciting causes are mentioned, the author assumes the universal influence of toxic action which he refers to the toxin of the diplococcus of acute rheumatism and acute endocarditis. The account of the treatment of lesions of sensory neurons is full of interest; this includes the treatment of neuralgia, of sciatica, and of migraine, and the suggestions are, in the main, thoroughly practical. The two lectures with which the book concludes are devoted to functional nervous diseases—viz., neurasthenia and hysteria—and the absence of the "comparatively sure ground of pathological anatomy" somewhat mars the logical sequence. These diseases, however, receive the same amount of detailed care which has characterised the preceding lectures and the results of treatment are frequently much more encouraging. Many medical men will probably be grateful for the full and painstaking description of the Weir-Mitchell treatment, since this treatment often fails to give complete satisfaction owing to some slight oversight or to some well-meant relaxation of the rule of isolation.

The author has certainly succeeded in his endeavour to produce a book calculated to stimulate independent thought concerning rational treatment. In the main he avoids discussions of pathology and even of symptoms, though both are mentioned whenever they appear likely to facilitate the object in view—viz., the intelligent treatment of nervous disease.

---

*The Diseases of Children.* By JAMES FREDERICK GOODHART, M.D. Aberd. Eighth edition, edited by GEORGE FREDERICK STILL, M.D. Cantab. London: J. and A. Churchill. 1905. Pp. 829. Price 12*s.* 6*d.*

THE eighth edition of a work speaks sufficiently for itself without further comment on the part of the reviewer. Nevertheless, in spite of its many editions, "Goodhart's Diseases of Children" is one of those books which always seems to stimulate the imagination with an added suggestiveness and to breathe an air of renewed originality and freshness with each successive reading, although when we descend to a deliberate comparison of the successive volumes we find that these merits are not so much the result of revision of the text as due to something intrinsically broad-minded and sympathetic which has been there from the first and which appeals with a wider and wider significance the more familiar it becomes. In his preface to the present edition Dr. Goodhart says that his "bantling" may be said to be "growing up" and that each birthday "sees it increasing in wisdom and stature under the kindly and careful editorship of Dr. Still." The growth in stature, however, since its last birthday has been, for these days of lightning progress, but slow and sedate, for we notice that it has increased only by the measure of 19 pages. Its added wisdom reflects the

knowledge which has accumulated during recent years on the important subject of the characteristics of the blood in infancy and childhood, and on splenic and allied anæmias. In the chapter on disorders of the stomach a new paragraph is introduced on the subject of anorexia, a symptom, or perhaps an independent condition, which is said by the authors to develop at or about the period of second dentition, which sometimes causes alarm and for which, in view of the manner in which it is too frequently treated, some such practical advice as that which is given in the paragraph referred to is most opportune. When we add that Dr. F. J. Poynton's recent suggestion for employing citrate of sodium as a means of increasing the digestibility of milk has been included in the section on artificial feeding we have practically exhausted the main differences which distinguish the eighth edition from its immediate predecessor. One or two omissions and corrections have been made in the new text, including the rectification of the mistake which appeared in the last edition in one of the formulæ in the appendix and to which we referred in our review of the seventh edition. Otherwise "Goodhart's Diseases of Children" remains the same trustworthy friend that it has proved itself to be to almost a whole generation of practitioners.

---

*The Care and Management of Delicate Children.* By PERCY LEWIS. London: Cassell and Co., Limited. 1905. Pp. 192. Price 3*s.* 6*d.*

IN his little work on the "Care and Management of Delicate Children" Dr. Percy Lewis has compressed a considerable amount of useful information into a very small number of pages. Although the author clearly addresses himself chiefly to lay readers, nevertheless there is a sufficient basis or leaven of original scientific reasoning to appeal to most of his professional *confrères* and to make the greater portion of the book worthy of the attention of medical officers of schools and others to whom the professional care of delicate children is committed.

There are certain points in the general management of the developing child which are so strongly emphasised by Dr. Lewis that he may incur the reproach from certain readers of being almost a faddist in these respects. One of these points is the claim that oral sepsis and deficient mastication may be the *fons et origo* of a vast number of ailments to which children are particularly liable. Another subject on which the author has, owing to his considerable experience in the treatment, a right to speak forcibly is that of nocturnal enuresis. He ascribes this condition as due to general debility caused by an excessive starchy diet "associated with inability to properly digest that excess." Other authors, including, if we rightly remember, Dr. O. J. Kauffmann of Birmingham, have adduced similar arguments in favour of the condition being due to an excess of animal food. The truth may possibly lie in the combination of these two causes, both of which undoubtedly tend to produce varieties of auto-intoxication which may so disturb the nervous functions as to produce explosive or epileptic discharges of any nerve centre or centres among which those controlling the act of micturition must be included. We are inclined to think that in the pathogenesis of nocturnal enuresis Dr. Lewis has not laid sufficient emphasis on the factor of nervous instability—hereditary or acquired—in the subjects of this complaint. The hair-trigger-like action of the centre for micturition may be simply a local expression of the general explosive action of the nerve cells. We thoroughly agree with him, however, that an anti-diabetic diet is a most efficacious line of treatment. A chapter on Debility of the Nervous System which deals with the more or less allied conditions of insomnia, night-terrors, somnambulism, and epileptic tendencies in general, contains some very useful hints for the treatment of a class of complaint which is often the cause of much anxiety both to parents and to teachers.

On muscular exercise and physical development the author expresses some very sound opinions; he has less faith in many of the systematised methods, such as those employed by the Swedes and the Germans, than in the ordinary athletic recreations in which English children indulge. "Generally speaking," he says, "the less one is attached to any one general system the better will be the results. The splendid development of the chest of the savage is not obtained by any system of breathing exercises, nor is the better development of the chest of a healthy boy when contrasted with that of a girl due to any system of breathing exercises, but it owes its superior development to a greater number of more active and varied physical exercises." He finally draws attention to points which are often forgotten—namely, that muscular development of the chest does not necessarily mean development of the lung, and again that expiratory ability is quite as important as inspiratory.

The great aim of all physical exercises should be to attain a properly coördinated development of all the organs and groups of muscles which make up the human frame. There is no advantage, but rather the reverse, in over-development in any one particular direction, for by so doing we run the risk of upsetting the general harmony and equilibrium of the body as a whole. Dr. Lewis, although he does not exactly express himself in these words, clearly recognises that this should be the fundamental principle on which physical exercises should be conducted. In every respect we regard this little work as one likely to prove most popular with both lay and professional readers.

---

*Experiments and Observations on the Vitality of the Bacillus of Typhoid Fever and of Sewage Microbes in Oysters and other Shellfish.* By E. KLEIN, M.D., F.R.S. Pp. 79. Three plates.

THESE investigations were undertaken on behalf of the Worshipful Company of Fishmongers of London with the objects set forth in the title. It seems very right and proper that the great London trade guilds should initiate such investigations as these, directed as they are to insure the prosperity and efficiency of the trades with which the guilds are concerned, and we should welcome further evidence that these bodies are alive to the importance of such researches. That the Fishmongers' Company moved in this matter from a desire to safeguard the public from the dangers of improperly placed or contaminated oyster beds we would fain believe but we fear that had not the oyster scare threatened the trade with great financial loss very little would have been done.

The actual results detailed in the report, though valuable, are not particularly novel. They definitely settle the question as to whether the bacillus typhosus will live in the oyster. It is demonstrated that there is destruction of the bacillus typhosus both in the body of the oyster and in sea water; that an oyster infected with large numbers of typhoid bacilli "cleans" itself in about from nine to 12 days when placed in clean water which is frequently changed; and that oysters kept in the dry state, though capable of destroying the bacillus, yet remain polluted for a much longer period than oysters placed in constantly changed clean water. As the practical outcome of these experiments Dr. Klein recommends that the oysters before being consumed should be laid in tanks or ponds receiving no other than clean sea water for a period sufficient to insure the destruction of any contaminating microbes which may have gained access to them. Similar experiments were conducted with cockles and mussels. The curious result was obtained that in the body of the cockle actual growth of the bacillus typhosus occurs.

It is further shown that the usual method of cooking cockles by pouring boiling water over a mass of them does not destroy the dangerous microbes but that by steaming under pressure for from three to five minutes the infective germs are destroyed without injuring the proper aspect and condition of the fish. The mussel, like the oyster, can destroy the typhoid organism. The relations of the oyster to bacilli coli are similar to those existing between the oyster and bacillus typhosus. Dr. Klein towards the end of the pamphlet combats the idea (countenanced by the bacteriologist to the Sewage Commission and by Mr. A. G. R. Foulerton) that oysters derived from "clean" layings and sea water taken many miles away from shore contain large numbers of the bacillus coli communis. It must be remembered, however, that both Dr. A. C. Houston and Dr. J. W. H. Eyre have demonstrated bacillus coli communis in the fæcal matter of sea birds and fish.

The medium devised by Conradi and Drigalski was used throughout these experiments for the culture and isolation of the typhoid and colon bacilli and a final section of the report deals with certain organisms of sewage and fæcal matter which give rise to colonies which might possibly be mistaken for bacillus typhosus. Several photographic representations of the appearance of Drigalski plates made with typhoid material are appended to the report.

## LIBRARY TABLE.

***Essentials of Diseases of the Ear: Arranged in the form of Questions and Answers; prepared especially for Students of Medicine and Post-Graduate Students.*** By E. B. GLEASON, S.B., M.D., Clinical Professor of Otology, Medico-Chirurgical College, Philadelphia; Surgeon in Charge of the Nose and Ear Department of the Northern Dispensary, Philadelphia; one of the Laryngologists to the Philadelphia Hospital. Third edition, thoroughly revised. London: Henry Kimpton. 1905. Pp. 214. Price 4*s.*—Dr. Gleason's small handbook shows, by arriving at the third edition in the course of ten years, that it must have supplied a certain want. The first 35 pages contain a brief summary of the anatomy and physiology necessary particularly in aural surgery, the information being imparted in the form of a catechism. Tests for hearing are next considered. In regard to these we may notice that the author falls into the error of saying that Gellé's test will produce dizziness in cases of labyrinthine disease. The various diseases of the ear are briefly touched upon by means also of questions and answers, but we do not commend the discussion of all non-suppurative middle-ear diseases under one heading, a method of dealing with the subject that is bound to lead to confusion.

***A Manual of Clinical Chemistry, Microscopy, and Bacteriology.*** By Dr. M. KLOPSTOCK and Dr. A. KOWARSKY. Translated by THEW WRIGHT, M.D. London and New York: Rebman, Limited. 1905. Pp. 296 and 12 plates. Price 8*s.* net.—This manual represents the course given by its authors in their "Institute for Medical Diagnosis" in Berlin and aims at giving the essential features of the subjects treated; it is specially designed for the busy practitioner and to this end, wherever it has been possible, the simplest and the quickest methods have been chosen. The scope of the work is wide: bacteriological examination of the secretions, and so on, of the mouth, nose, conjunctiva, and skin; histological and chemical examination of the sputum, gastric contents, fæces, urine, urethral and prostatic secretions, blood, and fluids obtained by puncture; and a final chapter on formulæ of stains and culture media completes the list. In the text are over 60 illustrations, some of which are taken from von Jaksch, while the 12 plates are devoted to specific bacterial cultures, urinary deposits, and blood. The work is thoroughly practical throughout, but still the bearings of organisms in relation to disease and the significance of the results obtained are not omitted. It is just such a work as the practitioner who carries out his own chemical and bacteriological investigation requires. The methods are put directly and as described are easily understood. In some respects the methods given are more full than is usually the case in such works; notably so is this the case in the chapter (VI.) on fæces. The work seems one that will prove useful to the busy practitioner.

## JOURNALS AND MAGAZINES.

***The Ophthalmoscope.*** Vol. III., No. 10. Edited by SYDNEY STEPHENSON and CHARLES A. OLIVER. Sub-editor: C. DEVEREUX MARSHALL. London: George Pulman and Sons, Limited. Price 1*s.* Annual subscription, 10*s.* 6*d.*—This number contains two original communications. 1. A Family with Irideremia, by T. K. Hamilton, M.D. Dub. The details of five cases are given. Dr. Hamilton prescribed amber-tinted glasses in these cases and states that he "can testify to their usefulness." One of the cases presented the rare feature of the disappearance of a cataract by spontaneous absorption, no vestige of lens or capsule being left. 2. Is the Use of Electric Light Injurious to the Human Eye? by E. F. Drake-Brockman, F.R.C.S. Eng. Lieutenant-Colonel Drake-Brockman adduces six cases in which there was reason to believe that the electric light was injurious, being apparently the cause of irritation, congestion, and inflammation of the conjunctiva. The avoidance of the use of the electric light was in each instance followed by recovery. The clinical memoranda contain an account of a case of Paralytic Strabismus from Fracture of the Sphenoid Bone, by J. M. Wainwright, M.D., and Gilbert D. Murray, M.D., and of an Ophthalmoscopic Lamp, with an illustration, by J. T. Gradon, M.A. There are, in addition, abstracts from current literature, reviews, and notes.

***The Bristol Medico-Chirurgical Journal.***—The September number of this magazine is a very good one. It opens with an address by Dr. J. Michell Clarke upon the Relation of Medicine to Natural Science, which ends with the expression of a fear that perhaps we may be at the beginning of a barren period of our art, owing to the increase of specialisation and to the resulting lack of touch with general scientific progress. Dr. J. Swain deals practically with the subject of Cholelithiasis and Mr. Charles A. Morton gives notes of 155 Cases of Operation for Appendicitis, advising the adoption of a position of the patient in which the anterior superior iliac spine is the lowest point of the trunk. Dr. J. M. Fortescue-Brickdale writes on Congenital Dilatation of the Ureters with Hydronephrosis, a condition which he attributes to a hypertrophy of the bladder wall analogous to the condition occurring at the pylorus. Dr. F. H. Edgeworth treats of Some Anomalous Cases of Locomotor Ataxy, and Dr. William Cotton of Stereoscopic Skiagraphy.

***The Dublin Journal of Medical Science.***—In the number for September an interesting paper by Dr. Sidney John Cullum upon Sedatives and Narcotics in the Treatment of the Insane merits study by others than medical officers of asylums for whom it is mainly intended. He speaks well of the comparatively new hypnotic veronal in suitable cases and gives the advice never to use a pure hypnotic in the daytime. Mr. Edward H. Bennett records a case of fracture of the tibia, without injury to the fibula, due to indirect violence and Mr. T. E. Gordon and Dr. William M. A. Wright discuss a case of intestinal obstruction due to a gall-stone.

KING'S COLLEGE HOSPITAL AND MEDICAL SCHOOL.—The following entrance scholarships have been awarded:—The Epsom scholarship (free tuition) to Mr. H. L. Burton; a medical entrance scholarship of £50 (for university candidates) to Mr. J. S. Owen; the Sambrooke exhibition (science) of £100 to Mr. N. H. M. Burke; and the Warneford scholarships (£100 each) to Mr. A. L. Burke and Mr. R. H. Hodges.

# THE LANCET.

*LONDON: SATURDAY, OCTOBER 14, 1905.*


## Professor von Behring on Tuberculosis.

IT seems to be the fate of international medical congresses to be the occasion for pronouncement of startling or somewhat heterodox views by eminent bacteriologists. At the International Medical Congress held in Berlin in 1890 Professor ROBERT KOCH astonished the world by stating that he had discovered a cure for tuberculosis. Unfortunately, subsequent experience has so far hardly justified this view of the value of tuberculin; although in justice to Professor KOCH it should be mentioned that this remedy, or the newer modification of it, is being extensively used in sanatoriums in many countries in combination with open-air methods with considerable success, while in this country it is used as the vaccine in the opsonin treatment of Dr. A. E. WRIGHT. Again, at the British Congress on Tuberculosis in 1901 Professor KOCH delivered his famous address postulating the view that human and bovine tuberculosis are essentially distinct from one another. A great deal of research has been directed to the determination of this question and one of the results of the International Congress on Tuberculosis which has just come to an end has been practically to give the quietus to Professor KOCH'S view. Now Professor EMIL VON BEHRING has taken the opportunity afforded by this Congress to announce that he has in preparation a new method of treatment of tuberculosis which he hopes will be both prophylactic and curative in man. This statement, which was the subject of much anticipatory comment in the lay press, seems to have reduced itself to much less ambitious proportions when the actual paper was read before the Congress on Oct. 7th. A translation will be found at p. 1126 of our present issue.

The fundamental conception of Professor VON BEHRING'S new method seems to be the production of a "cellular" rather than a humoral or an antitoxic immunity, induced by a modified constituent of the tubercle bacillus. This substance in its native state he has tentatively termed TC, while when it is modified by the cellular activity he refers to it as TX. He states that, in his opinion, in the process of immunisation of cattle against tuberculosis the TC is freed from other substances and exercises a specific action on the tissue cells, especially those of the germ centres of lymphoid organs. The TC is to be regarded as the cause on the one hand of the "hypersensibility" to KOCH'S tuberculin, and on the other hand of the protective reaction against tuberculosis. Part of Professor VON BEHRING'S experiments have been directed to saving the organism the labour of elaborating the TC which he has been able to effect *in vitro;* in other words, to substitute a passive immunisation for an active one. He then goes on to state that as a result of his researches he is able to distinguish three groups of bacillary materials. First, a substance soluble in water which possesses a fermentative and catalytic action. This substance, which he refers to as TV, represents the toxic factor of KOCH'S tuberculin, but a gramme in the dried state is more powerfully toxic than a litre of KOCH'S tuberculin. Secondly, there is a globulin, called TGL, soluble in a 10 per cent. solution of sodium chloride. It also is toxic after the manner of KOCH'S tuberculin. Thirdly, there are several non-toxic substances which are soluble in alcohol, ether, and chloroform. The bacillus deprived of these three groups of bodies is referred to as the "rest bacillus," which retains the shape and staining reactions of the tubercle bacillus itself. By means of certain preparations, the nature of which Professor VON BEHRING withholds, this "rest bacillus" can be transformed into an amorphous substance which is capable of being absorbed by the lymphoid cells of certain animals, such as the guinea-pig, rabbit, sheep, goat, ox, and horse. This amorphous substance is elaborated and metamorphosed by the lymphoid cells of such animals and the cells then assume oxyphile or eosinophile characters and coincidently with this change the condition of immunity develops. A point of great importance is that the TC, although a non-living substance, is capable of producing tubercles which, however, neither caseate nor soften and correspond in all details to "the tuberculous granulation" of LAENNEC. As already stated, Professor VON BEHRING believes that the TC can be elaborated *in vitro* in such a manner as to be capable of utilisation in the treatment of human tuberculosis, but he does not propose to publish the therapeutic section of his work until the efficacy and innocuous nature of his new remedy have been established by clinicians. He also thinks that it is advisable that his experiments on animals should be controlled by observers in other laboratories, to some of whom he offers to supply his "remedy" for that purpose. In conclusion, he draws a parallel between the present state of his researches and that of his work on diphtheria antitoxin, published in 1890, which was subsequently so triumphantly established.

Professor VON BEHRING is a pathologist of world-wide reputation, with a splendid record of past achievements, and we may hope that his confidence in his own work will once again be justified. None the less we cannot but deprecate the great publicity which has been given to an investigation which is at the present time very far from complete. It appears to us that such congresses as that at which the announcement has been made have designedly a public character. Their rôle is to give opportunities for bringing forward finished work in relation to the treatment and prevention of tuberculosis (among other diseases) and to educate public opinion in regard to these matters. Such assemblies are certainly not intended for the presentation of incomplete work or the utterance of heterodox views as to the pathology of the disease. To bring forward such an investigation and to allow it to be published in lay journals with all its complex technicalities is to invite misrepresentation and Professor VON BEHRING has only himself to thank if he is made to say things which he never intended. Another painful

aspect of the publicity which has been given to the statement is that it is calculated to raise hopes which even at the best can only be realised in the distant future.

## Infants in Elementary Schools.

NOT many weeks ago we had occasion to comment upon the medical side of a question which has been brought into prominence lately in relation to educational controversies—namely, whether it is advisable for children under five years old to be sent to public elementary schools—and we expressed the very decided opinion that upon grounds of health the drawbacks to such treatment largely outweighed the advantages gained. The discipline exacted in infant schools as at present conducted appears unsuited to children of this tender age, while the increased liability to the incidence of certain infectious diseases is a source of obvious danger. A volume of reports recently issued by the Board of Education embodying the results of inspection of infant schools entirely confirms the view which we endeavoured to enforce. The scope of the inquiry directed by the Board of Education was sufficiently comprehensive and illustrates the wisdom and forethought which guide the main policy of this department under the control of its present eminent chief, Sir WILLIAM ANSON. Not only the intellectual results exemplified in the children examined but their physical condition, their home surroundings, the modes of teaching adopted, and the apparatus used for this purpose,—all these and other points were noted by the inspectors and duly received comment and criticism. The conditions at present prevailing in London come in for almost unmitigated condemnation at their hands. Even the value of the results apparently obtained is shown to be illusory, for it is shown that children who start school life at the age of five years are able in a very short space of time to make up any leeway separating them from those who begin as infants of three and four, while the powers of original observation and spontaneous thought exhibited by the former are markedly greater. It seems, indeed, that the discipline insisted upon in infant schools and the method of teaching adopted tend to render the children mere "repetition machines," answering questions in a stereotyped form with a view chiefly to please their particular teacher. They pick up a certain number of phrases—acquire the outward mould in which thoughts are expressed—but the thought itself is stifled in the process.

If this be the intellectual result obtained, what is to be said of the physical conditions prevailing? We find that in many chools the infants have to work, or rather to be kept in the school building, for the same time as the older children, partly to comply with a cast-iron time-table, partly in order that their elder brothers and sisters may be able to take them to and from school. During such time the poor little mites are often kept sitting still on benches, sometimes in constrained attitudes with folded arms or "hands over heads," instead of being allowed to indulge in the free movements natural to their age and necessary for the development of their muscular powers. That they should fall asleep in their places and slumber in cramped unhealthy attitudes is only to be expected in such circumstances, quite apart from the character of the employment at which they are kept, though this is often unsuitable enough. Attempts are made to teach infants the alphabet, the numerals, and the simpler parts of the multiplication table, and they are urged continually to remember certain things and to repeat them by rote. By endless repetition they learn that two and one are three, but of the meaning of this formula they remain completely ignorant, and if shown by their teacher three sticks in one hand and two in the other they are quite unable to say how one quantity differs from the other. Instead of being allowed to express their own ideas in natural language they are hampered by being told to speak only in formal sentences and are hopelessly confused by such a rule. All this is sufficiently melancholy but it might be hoped that such lessons are the exception and that most of the infants' time is taken up with games and exercises involving plenty of movement. This does not seem to be the general rule, for in too many places it appears that the space available in the schoolroom is too scanty to permit of much movement, while use is seldom made of the halls or playgrounds of the schools for the little ones, for fear their noise should interfere with the studies of their elders. One especially unsuitable employment for children of tender years merits separate mention and condemnation, that of threading needles. When we hear of infants kept at this useless work for 20 or 30 minutes at a time we can only marvel at the perversity of scholastic human nature. Such an occupation would entail a considerable strain on any eye, and the eye of the growing infant is particularly easily damaged by misuse. If performed in a defective light needle-threading must involve real cruelty and we read that the inspectors found the light defective in many infant schools. Curiously enough, while one lady blames the failure to construct proper windows which would admit a due allowance of sunlight, another complains rather of the glare and dazzle arising from too strong a light shining in the children's faces, and we must conclude that different errors exist in the different areas visited but that proper conditions are exceptional. In only one respect do we find that children admitted to school at the age of three or four years excel those who go later and that is in respect to what is called discipline. They acquire the art of sitting still during lessons and repressing their natural inclination to move about or to talk, and this faculty is naturally appreciated by their teachers when they reach higher classes. On the other hand, it seems that parents who have respectable homes and who endeavour to bring up their children according to their own standard of behaviour complain that school life has a deteriorating influence upon the infants who are contaminated especially during play-hours by the coarse speech and rough manners of companions coming from less reputable surroundings.

If then neither intellectual nor moral advantages result from sending infants to school, while health is liable to be injured in many ways, are we to say outright that all infant schooling should be at once abolished? The matter is not quite so simple as it would at first sight appear. The tendency of free education as of other socialistic institutions may be to level down rather than up, but there is yet a class of persons at the bottom of the social scale whose infants

derive good rather than evil from school conditions if these are reasonably managed. Infants coming from the poorest class of all are said to improve physically by being placed amid the more sanitary surroundings of the school and it is desirable not to deprive them unnecessarily of these advantages. It is requisite to devise some scheme which will be capable of adaptation to the divergent needs of different classes of children and since legislative discrimination between class and class is impossible it is not easy to find a satisfactory solution of the problem. It would seem in the first place advisable that no compulsion or pressure should be exercised upon parents to send to school children under five years of age and as a corollary of this the attendances of such infants must not be allowed to influence in any way the grants made to individual schools. In the second place, schools for infants should be schools in name only and the time spent by the children within their precincts should be devoted to rationally devised pastimes and exercises from which all attempt at systematic instruction in abstract knowledge, however elementary, should be excluded. For their supervision it is needless to provide highly certificated and expensive teachers; simple motherly women or girls are all that is needed and much waste of money might be prevented by substituting them for trained instructors. Whether these institutions for infants should be in any way connected with the schools for older children—whether, indeed, they should be under the education authorities at all—is fairly open to discussion. The matter falls rather within the sphere of medicine and sanitation—of public health in its widest signification—than in that of teaching. We have alluded elsewhere to the necessity in manufacturing towns for the provision of municipal crèches for the infants of the poor when their mothers go out to work. Perhaps together with these some such institutions as we have sketched above might be organised for rather older children who are yet infants in the eyes of the school authorities. We must, however, leave to others the organisation of details. Here we can only point out the defects of existing conditions and the lines on which future reform should be carried out in order that the health of the rising generation may be improved, not injured, by the process of education.

## The Introductory Addresses.

IT would be difficult to find any better evidence of the many-sided character of medicine than is furnished by the introductory addresses which have been given at the different medical schools of the metropolis and which appear, in full or in abstract, in the present or in the last number of THE LANCET. If we take them in the order of their places in our columns we find that Mr. R. BRUDENELL CARTER, at St. George's Hospital, dwelt chiefly upon the importance of physics and of language as elements of medical education, upon the importance of truth as the chief factor in medical ethics, and upon the urgent necessity for the endowment of research as one of the chief functions of the great hospitals, especially of those in which the junior staff has been released from the drudgery of elementary teaching by the nascent organisation of the University of London. Sir JAMES CRICHTON-BROWNE, at Charing Cross Hospital, took as his main topic the much-abused word efficiency, and devoted most of the time at his disposal to a discussion of the various means by which the condition the word is intended to express may be striven for or secured. The habits of the student, the amount of sleep which he requires, the proper extent of his devotion to athletics, and the desirability of abstinence from alcohol furnished Sir JAMES CRICHTON-BROWNE with topics upon which he discoursed with all his wonted eloquence and felicity. At the Middlesex Hospital Dr. R. A. YOUNG dealt with the great questions underlying the phrase "method in medicine" and described the intellectual ὄργανον which should be brought to bear upon its study. At St. Mary's Hospital Dr. W. HARRIS adumbrated some rather revolutionary changes both in education and qualification, casting forward a prophetic eye to the time when all existing diplomas and licences will be swept away to make room for one State-controlled examination held at the same time at various university centres. Concerning this we may perhaps pause to say that threatened men live long. At University College Dr. H. R. KENWOOD supported the claims of sanitary science to occupy a prominent place in medical education; and at the Royal Free Hospital Mrs. BRYANT, D.Sc., dwelt upon the sources and value of enlightened interest in the acquisition of knowledge. Finally, at King's College Hospital, the Regius professor of medicine at the University of Cambridge, Dr. T. CLIFFORD ALLBUTT, described the true functions of a university and the manner in which these could best be brought to bear upon the practical conduct of medical study, concluding with a brilliant *excursus* upon the anticipated progress of medical science and upon the part which prevention might be expected to hold in the practice of the future. "How long," he asked, "would the unidea'd Englishman be content to spend his money in charity to mitigate calamity and suffering which by more timely aid to education and research he might largely prevent?"

It is often a wholesome mental exercise for the medical practitioner to endeavour to divest himself for a moment of his professional knowledge and of his professional habits of thought that he may place himself for a time in the point of view from which some question concerning health might not unreasonably be regarded by the public. Such a question, in relation to the general subject now before us, is furnished by the concurrent testimony borne by several of the addresses to the existence of a belief in a great future for medicine, a future in which its most important work will be in the direction of anticipating and providing against evils which it now, too often vainly, only endeavours to remedy. Most of the speakers asserted, either explicitly or implicitly, that with a harvest o discovery awaiting research there is a lamentable scarcity alike of labourers in the field and of provision for promoting and for encouraging their labour. The public do not recognise, as a rule, the conditions under which alone research can be fruitfully conducted; and they are scarcely at all acquainted with the difficulties which it presents. They do not in the least appreciate, what is self-evident to the student, the care that is required in order to secure proper conditions of study, to exclude accidental sources of error,

to avoid being misled by mere coincidences, to struggle against the growing belief which is almost suspiciously in harmony with the wishes of the experimenter, and to turn deaf ears to the promptings of the particular *idola* which may tend to warp the judgment in the case. The last few years have not been free from practical warnings against premature conclusions in matters of science, and the recent controversy concerning the identity of human and of bovine tuberculosis affords a good example of the facility with which men of the best intentions may deceive themselves and others. But the facts bearing upon the general question of research, and the conclusions which these facts justify, are scarcely at all known to the public, even to that section of the public which we are accustomed to describe as educated or as intelligent. They would probably regard the systematic study of the phenomena of disease as an occupation which, if sometimes a little nasty, must nevertheless be "interesting" and fairly entitled to hold its own, let us say, with amateur photography. As long as this is the point of view of the public no adequate support of medical research can be expected from them, more especially as they do not, and cannot, recognise either the possibilities of the prevention of disease which are now opening to our gaze or the enormous importance to the nation of converting these possibilities into actualities. They too often take disease as a matter of course, like the east wind or a thunder shower, and do not in the least realise that it is mainly a consequence of conditions which it should be absolutely within the power of individuals or of the legislature to remove. Until this conviction is attained the labours of physicians and of sanitary reformers will excite but little interest and will attract but little support. It should be one of the main objects of the profession to dispel popular ignorance and to bring about a better acquaintance alike with the tendency of medical labours and with the fruits which those labours may reasonably be expected to produce.

The addresses as a whole may be said to display a reasoned conviction on the part of men of long and wide professional experience that the work now awaiting the medical profession, or at least those of its members who are favourably situated for the purpose of performing it, is of a kind for which no educational advantages would be superfluous, upon which no amount of intellectual capacity would be other than well and worthily bestowed, and for the due prosecution of which liberal endowments, either by the State or by private individuals, are absolutely necessary. The dawnings of knowledge by which we are everywhere surrounded seem to us to be of such a nature as to demand that this reasoned conviction should be pressed home upon the minds of the public; and that the prospects of the prevention or arrest of many of the maladies which now destroy thousands of our population should be explained more fully and more lucidly than they have been in the past to those in whose power it is to provide facilities for the conduct of the necessary inquiries. A telling popular illustration of the nature of these prospects might perhaps be afforded by the recent discovery that the common bed bug has been shown to be at least one of the means by which the spirillum of relapsing fever may be conveyed from the sick to the healthy. We have possibly been too modest in our unwillingness to admit the public to our confidence and this is very regrettable. If the public understood better the needs and conditions of medical work there would be no difficulty in obtaining legislative reforms which are badly wanted, but which in the present conditions of apathy are certain not to be promoted. There is at least no present hope of any adequate support of science by the State, either directly or through the medium of the universities. For legislation compelling sanitary authorities to do their duty and so far to lighten the national burden of disease there is no demand to which any recent Ministry would respond by action and so, as regards both knowledge and administration, we may have to lag behind. We must expect to see quackery still flourishing under the protection of the law, and to see the efforts of medical officers of health more than occasionally thwarted by the bodies to which they are subordinate. In such circumstances it is useless to call upon HERCULES and necessary to do the best we can for ourselves. We must, as a profession, strive by tongue and pen to teach the public that we are men of science, engaged in scientific work of great difficulty and complexity, in aid of which both moral and pecuniary support are urgently required.

# Annotations.

"Ne quid nimis."

## THE METROPOLITAN HOSPITAL SUNDAY FUND AND THE OUT-PATIENT DEPARTMENT.

IT is well known that the out-patient department of our metropolitan hospitals is a subject of anxiety to all true friends of our voluntary hospital system. And it is an open secret that the Distribution Committee of the Metropolitan Hospital Sunday Fund has lately taken a step which will bring the general feeling of dissatisfaction with the administration of the department under the notice of the hospital authorities. The Distribution Committee, meeting in July, passed the following resolution:—

> This committee is of opinion that the serious increase in the number of out-patients (many of whom have trivial complaints) is detrimental to the welfare of hospital and patients, inasmuch as they are a burden to the funds of the hospitals and prevent the staff from giving the necessary attention to serious cases.

This resolution has been forwarded to all the hospitals in London with a request for the opinion of the committee of each hospital and for a suggestion of a remedy for the evils before the end of October. It is devoutly to be hoped in the interest of our voluntary charities that this request will be seriously considered and answered. There are gratifying indications that the wealthy sections of society are beginning to realise that their contributions hitherto have been sadly inadequate—disproportional alike to their own power to help and to the needs of the sick poor whose plight in the straitened homes of London is more than pitiable. Nothing would tend more powerfully to stimulate really worthy contributions than an assurance that the cases chosen for hospital help are fit cases and that all pauperising laxness of administration will be remedied. The medical profession will be only too ready to assist the hospitals in the reform, on the one hand, by meeting the needs of classes who can pay for their own ordinary medical attendance and, on the other, in furthering the quick relief of cases of disease or accident which really require hospital accommodation. The

action of the Hospital Sunday Fund will be much appreciated by all who have at heart the highest use of hospitals and the providence and self-respect of the people. All such will watch with interest the result of the inquiry set on foot by the Fund which has done so much for this great cause and which only discharges its duty in seeing that the funds entrusted to it are spent in the relief of persons really needing help.

## THE BRITISH LEGATION AT TOKIO AND ITS MEDICAL OFFICER.

WE have received from Mr. Sidney Gerald Gomes, F.R.C.S. Edin., a British subject practising in Tokio, a copy of some correspondence between himself, the British Medical Association, Sir Claude Macdonald (H.B.M. Minister, Tokio), and the President of the Royal College of Surgeons of Edinburgh. The matter with which the correspondence deals is shortly as follows. In the early part of January the post of medical officer to the British Legation in Tokio, which had been held by Dr. Edwin Baelz, who was apparently of German nationality, fell vacant. To the vacant post was appointed Dr. Wunsch, also of German nationality, who does not, we gather, possess a medical qualification registrable in Great Britain or Ireland. Mr. Gomes thereupon wrote to the British Medical Association, pointing out that this appointment of Dr. Wunsch was contrary to Sections XXXI. to XXXVII. of the Medical Act of 1858 and that it practically authorised him to practise medicine, surgery, and midwifery within the dominions of His Britannic Majesty (the British Legation being British territory), although he was not legally qualified to do so. Mr. Gomes forwarded a copy of this letter to Sir Claude Macdonald who, in acknowledging it, regretted that Mr. Gomes had not communicated with the Legation before writing to the British Medical Association. In that case, he added, "I make no doubt that your view of the matter would have been considerably modified and nearer the truth." Sir Claude Macdonald also wrote to the British Medical Association and also sent a copy of this letter to Mr. Gomes. In it the Minister said: "I would not have appointed a foreign subject as medical officer to the Legation until I had exhausted every possible means which lay in my power to find a suitable one of British nationality." He further stated that the reference made by Mr. Gomes to the Medical Act of 1858 was unfortunate for that if no foreigner might practise within the dominions of His Britannic Majesty the Japanese might pass an enactment forbidding foreigners from practising within the dominions of His Japanese Majesty without a Japanese degree. We think that Mr. Gomes was perfectly justified in calling attention to the fact that a foreigner had been appointed as medical officer to the British Legation, but it would have been better had he communicated in the first instance with Sir Claude Macdonald. As for the point which Mr. Gomes raises that no one can practise within the dominions of His Britannic Majesty without being legally qualified to do so—i.e., without being registered—he is wrong. Such is our passionate love for freedom in these islands—we are not now referring to the colonies—that any person holding any medical degree, or even holding none whatever, can practise medicine or surgery, provided only that he does not state or imply that he is registered. Such unregistered person, however, cannot hold certain appointments and cannot sign certain certificates. Dr. Wunsch's position as an unregistered medical practitioner holding the appointment of medical officer within His Britannic Majesty's dominions, which the British Legation at Tokio certainly is, is somewhat peculiar. Members of legations are, like Cabinet Ministers, "only human and sometimes very human." All sorts of demands may arise for certificates which have to be signed by a registered medical practitioner and which are of no legal value unless the signature is that of a registered medical practitioner. Furthermore, we cannot think that Sir Claude Macdonald is really serious in saying that he was unable to find a British practitioner suitable for the post, and as in these days prestige counts for so much it seems a diplomatic error to have appointed a foreigner, however skilled, to what is practically a diplomatic post. But that the appointment contravenes the Medical Act is an argument which, we think, will not hold water. We hasten to add that Mr. Gomes did not desire the post for himself and we repeat that he was quite justified in drawing attention to the circumstances of the appointment.

## DRUNKENNESS AND ALCOHOLISM.

IN both the medical and the lay press there is now manifested great interest in the question of intemperance, for all are beginning to recognise the vast importance of the points involved. There has been a liberal outpouring of opinion, informed and otherwise, touching the various aspects of the problem of alcoholism. The fresh data which have thereby been added to the sum of our knowledge have not, it must be admitted, been very numerous; but in this we have hardly cause of complaint, for after all the function of discussions of this nature is less to elicit new facts than to clarify and to coördinate our perceptions of the old. Unfortunately, however, we cannot claim that even in this latter and more proper function the discussions to which we refer have done all that we might legitimately demand of them. And we shall probably be pretty near the truth if we conjecture that the cause of their failure to further our enlightenment is to be found mainly in the circumstance that in handling the old facts the contributors to the debates have been unable to get free from the old fallacies. One of these fallacies in particular has been so much in evidence and has contributed so largely to the confusion of lay ideas that it appears desirable to give it notice. We refer to the view that identifies alcoholism with drunkenness and treats the latter phenomenon as the essential factor in intemperance. This view is notoriously current in the general mind; it is expressed in the common notion that the way to combat the social dangers of alcoholism is to legislate against drunkenness or against the conditions that are supposed to promote drunkenness, and it accepts the police statistics of the arrests of drunken persons as the measure of alcoholic excess whenever there is a question either of the distribution of alcoholism or of its relation to other social phenomena. This is an error which, as it has its genesis in an imperfect appreciation of the physiological basis of alcoholism, may be taken as an instructive example of the need of medical criticism in the discussion of bio-social problems. It is a common failure to recognise a distinction that is vital to the clear understanding of the facts of intemperance—the distinction, namely, between the two primary modes of drinking, between, as we may roughly put it, drinking for convivial pleasure and drinking as an aid to muscular and nervous effort. The latter of these two modes of drinking is the more common source of chronic alcoholism and, since it is through the chronic intoxication that much of the mischief of alcohol is wrought, it is also this form of drinking which mainly is of grave social significance. Convivial drinking, though it is the ordinary cause of drunkenness, tends usually to be intermittent and is therefore less likely to produce chronic alcoholism than continuous indulgence. The mechanic who gets drunk on pay-day but who, owing to the circumstances in which he works, cannot have access to liquor during the hours of labour runs no great risk of chronic intoxication. On the other hand, the dock labourer who works through the day on repeated doses of "four ale,"

even though he were never to get drunk, would be likely to develop the disorders of chronic poisoning, with the tendencies to morbid conduct that belong to that condition. Of course, as a matter of fact, the industrial drinker, in addition to being chronically intoxicated, is prone to get drunk as often as he can, but his drunkenness is not then the cause of his alcoholism, it is merely the expression of a secondary tendency to convivial excess. Bearing this distinction in mind, we perceive that drunkenness *per se*, however regrettable as an evidence of low culture is a matter of secondary importance; although it is responsible for much misery, discomfort, and harm to others it is not a direct cause of the widespread evils of alcoholism and it does not actively promote chronic intoxication. This conclusion will not only find ready confirmation in the individual experience of those who are brought in contact with the alcoholic, it can also be fully verified from the statistical data concerning intemperance in this country. It is, indeed, the only view on which it is possible to explain many of the best ascertained facts regarding the regional distribution of drunkenness in relation to other conditions. It has often been pointed out, for instance, that in this country the maximum prevalence of drunkenness is met with in the great mining districts, Durham, Northumberland, and South Wales, which form, from this point of view, a special group, showing an addiction to this vice far beyond what is found in the other counties. And yet in these same districts we find no corresponding prevalence of alcoholic disease or of the various forms of delinquency that are supposed to be connected with drunkenness. Durham is far and away the most drunken district in England but the death-rate from chronic alcoholism and liver disease in the registration county, which, though not identical with the administrative area, differs from it too little to affect the comparison, does not exceed that in the sober agricultural counties. It is the same in South Wales, and if Northumberland appears to be an exception and shows a high rate of alcoholic mortality the fact may safely be set down to the dominant influence of Newcastle which contains 37 per cent. of the population of the county and which, as a seaport and a centre of the metal industry, is under conditions quite different from those of the mining districts. And this result is fully borne out by the occupational death-rates from which we learn that the mortality of coal miners from chronic alcoholism and from liver diseases is the same as that of agriculturists and lower than in any other occupational group. These facts would obviously be inexplicable if drunkenness were, as is commonly supposed, a cause of chronic alcoholism, but they become perfectly intelligible when we consider that, while the conditions of the coal miner's labour exclude the possibility of industrial drinking and thus preserve him from chronic intoxication, his high wages give him ample opportunity for convivial excess so that he is at once prone to drunkenness and free from chronic alcoholism. We should find a similar state of things if we investigated the regional incidence of the chief forms of crime that are known to be largely of alcoholic origin and the conclusion to which these considerations point is evident. If we recognise that simple drunkenness plays but a small part in chronic alcoholism, that it is not a great factor as a cause of disease, or of crime, or of the other evils that give to intemperance the importance of a social problem, then we shall be correspondingly sceptical of the results to be hoped for from even the most intelligent methods of combating convivial excess. We shall not expect overmuch from the early closing of public-houses, and from other lauded reforms of this sort. And we may also, perhaps, be led to doubt whether the policy of sending the convivial "drunk" to prison and saddling the community with his maintenance is the last word of wisdom. We must all admit that the casual drunkard is a grave nuisance; he is an unpleasant survival of rougher times and a source of danger and annoyance to himself and others. As such he should be repressed but the legislation which represses him will not touch the genuine alcoholic subject save by accident.

## SYNÆSTHESIA.

IN the *Johns Hopkins Hospital Bulletin* for July Dr. H. L. Smith has described a series of cases in a family exhibiting the curious phenomenon known as synæsthesia, "secondary sensations," or "associated sensations," which consists in the constant association of a sensation with another of a different kind. In a slight form synæsthesia is not uncommon or even abnormal. Many persons experience a shivering sensation at the squeak of a pencil drawn across a slate. Others have their teeth put on edge by the filing of a saw. Such sensations are described as sound feeling. Colour hearing or sound seeing, as it is sometimes called, is one of the rarer forms of synæsthesia. It consists in the constant association of colour with some definite sound. Among the earliest observers of this phenomenon were Goethe and Hoffman. Nussbaumer first excited general interest in the subject by describing his own case before one of the medical societies of Vienna. An eminent neurologist present considered that his sensations were pathological and predicted mental disturbance but happily he was wrong. In 1881 Bleuler and Lehmann, the former of whom had the idiosyncrasy, reported that inquiries made amongst 596 normal individuals showed that 12·8 per cent. were more or less synæsthetic. Galton and Fechner have also written on the subject. Colour sensations are constant in the same person but vary in different individuals; for example, the sound of the vowel "a" is red to one person, blue to another, and black to a third. When light instead of colour is associated with sound the phenomenon is known as "photism." When a colour or some definite image suggests a sound the condition is termed "phonism." Colour hearing may prove annoying; the colour sensations associated with tones may destroy the strains of music and the play of colours seen while reading or writing may be most irritating. Nothing positive is known of the nature of synæsthesia; some regard it as pathological, others as physiological. Heredity is certainly a factor. Males appear to be affected more frequently than females but in the latter colour sensations are more intense. Dr. Smith describes the cases of a clergyman and all his children (three daughters and two sons) who were affected. The father, aged 49 years, was a man of high attainments. Since early childhood he associated the sound of each letter of the alphabet with a definite colour. The letters f, j, k, r, and x were reddish-brown; o and c were white; a, d, g, n, s, q, and u were transparent. The remaining letters were of a dull lead colour, shading down to black. Words received colour from capital letters. When a child he was laughed at by his elder brothers and sisters because he asked why a certain bay horse was given "the white name of Charlie." He did not know of the affection in any of his antecedents but his sister's daughter had colour audition. He had never mentioned to her his idiosyncrasy, about which he was sensitive. His eldest daughter, aged 23 years, was clever and a teacher. She asked Dr. Smith: "Why are the keys of the piano coloured in my mind?" and "Why do I sing or play anything familiar by colour?" The sounds of the letters of the alphabet did not assume a definite form but appeared on a light background; some were transparent, most of them were opaque, and all of them were coloured. Words took their colour from the prominent initial letter sound. Thus the "g" sound in grey, grief, get, and so on, gave these words a grey tint. Yellow words had a prominent "s" or "y" sound, as sweet, yonder, and so on. Blue words had an "l" sound, as love,

law, light, and the like. The higher musical tones were of light colour, the deeper ones dark, and the deepest black. She disliked some tunes because of unpleasant colour sensations. The senses of touch, temperature, and pain were also involved. Thus, hard objects were of dark colour, soft objects of light colour. Though the literature of synæsthesia is abundant few contributions have been made to it by the medical profession.

## LIFE IN THE ARMY.

Mr. Arnold-Forster spoke at the laying of the foundation-stone of the new barracks at Norwich the other day in his accustomed enthusiastic tone of what has been already done, or is being done, for the army and in the interest of the soldier. He was able to point with satisfaction to the increased amount of pay that the private soldier received and to draw a very favourable comparison between the condition of the soldier of the present day in this and other respects and that of the labourer of similar age and in the same class of life. That these changes had been recognised and had proved attractive he declared was shown by the number of recruits who presented themselves for medical examination. With regard to his army scheme as a whole we may say that we must wait until the next army estimates are laid before Parliament, when it will be put forward in its entirety. Meanwhile, the War Minister spoke with assurance as to the beneficial effect which recent changes had apparently had on army recruiting, although he was not altogether satisfied with the quality of the recruits attracted to the service. There are several points in Mr. Arnold-Forster's speech of medical and sanitary interest, some of which invite brief comment. During the past year, he says, "we have actually taken no less than 21,638 infantry recruits, of whom over 19,000, or the equivalent of some 24 battalions, have been enlisted for long service. The long-service enlistment did not commence till the end of October of last year. If it had begun with the month the total of long-service men would already have exceeded 21,000. Not only is this satisfactory in itself but it becomes much more satisfactory when we find that this large number of recruits was taken concurrently with a great increase in the rate of rejection. In some cases 70 per cent., and even 80 per cent., of those applying have been rejected. Those who know, as I do, how great has been the waste in the first two years, owing to the acceptance of unfit men, will realise what an immense advantage this high rate of rejection must prove to the regiments. There is universal testimony to the good quality of the long-service recruits." However much the army may be congratulated on having saved itself from a big wastage owing to the rejection of a large number of men as medically unfit for army life and duties the nation cannot view the matter in the same light. It either shows that the classes seeking employment in the army are not to be taken as representative of the ordinary type of the young manhood of this country, which is most probably the case, or that some general physical decadence is at work. Speaking of his desire to see an end put to the use of the old standard plans for barracks the Secretary for War declared his belief that "the effect of good barracks upon recruiting and the type of recruits is very great. The forlorn appearance of some of our depôts and barracks goes far towards deterring men from entering the service and does something to prevent the people of this country from understanding how genuine and how great are the advantages which the career of the soldier at the present day actually offers." That such may be the case we do not doubt. It is certain, however, that some of the older barrack type of buildings are radically bad and unfit for occupation; but why, when he is about it, does not Mr. Arnold-Forster also turn his attention to the deterrent effect which our buildings used for recruiting purposes are likely to have on would-be recruits and especially on those intelligent and self-respecting young men whom all desire to see attracted to the army and to become fit and eligible for its non-commissioned ranks? While we think that, if only on the score of the soldier's health and efficiency and in order to attach him to the service to which he belongs, everything that is necessary should be provided for his comfort and well-being in barracks and in his barrack surroundings, it seems to us only reasonable that at the beginning of his army career nothing should be neglected to attract him to it, which is not by any means the case at the present time so far as our army recruiting arrangements are concerned.

## QUEEN'S COLLEGE, BELFAST.

SOME weeks since Sir Donald Currie, Bart., G.C.M.G., an old Belfast man, made a munificent offer to the President of Queen's College, Belfast: it was to subscribe £20,000 to the equipment fund of the institution provided that before Christmas a similar sum was subscribed by the friends of the College. A great effort was at once put forth and in the Belfast papers on Oct. 7th the first list of subscribers appeared, indicating that £12,554 15*s.* have been raised. Of this sum it is interesting to note that members of the medical profession have given over £1700. It is hoped that the additional amount will soon be raised and as an effort in this direction a meeting of medical men, old students of the College, was held in the Medical Institute, Belfast, on Oct. 5th. The President of the Ulster Medical Society (Dr. W. Calwell) occupied the chair and urged the pressing necessity of subscribing to a fund which was so needed for the better equipment of the College. Dr. J. R. Davison, in very happy terms, proposed the following motion which was carried unanimously: "That this meeting of the medical *alumni* of Queen's College, Belfast, expresses its appreciation of Sir Donald Currie's munificent offer and that it declares its intention to assist the committee of the Better Equipment Fund in its efforts to secure the full benefits of the proposed gift." An executive committee, with secretaries, was appointed to carry out the objects of the meeting. It is intended to appeal to all former medical students of Queen's College, Belfast, asking them to subscribe to the scheme.

## A CASE OF HYDROPHOBIA IN PALESTINE.

WE have received from a medical man an account of a case of hydrophobia written by a lay correspondent in the Lebanon district. The patient was an Arab woman who had been bitten in the foot by a dog three months before the onset of her symptoms. The bite was, however, of so trifling a character that there were only slight bruising and swelling for two or three days and the skin was apparently unbroken, so that its occurrence was entirely forgotten until after the convulsive symptoms of hydrophobia had appeared. A day or two before this, however, the same foot was slightly injured by being trodden on by a sick sheep which the woman was tending. She then developed symptoms, first refusing all water, when the diagnosis of hydrophobia was suggested by an English medical man who saw her, although the bite had been forgotten. Next day the convulsive seizures developed, which may be described in the words of our correspondent: "She rolled from end to end of the room, running at times on all fours, foaming at the mouth, tearing everything with her teeth and hands, and making dreadful sounds like a dog." A point of some interest was that the patient frequently talked in English as well as in Arabic, her native language, although she had only learnt a little English at school some 15 years previously and had not spoken it since that time. Both

the sight of water and the sound of its being poured brought on convulsive attacks and the patient was quite unable to drink although she was very thirsty. These attacks continued for some hours when she died from exhaustion. The account given is a graphic description of a typical case of severe hydrophobia which is fortunately now so rare in this country since the excellent muzzling and quarantine orders of the Board of Agriculture that probably few of the younger generation of medical practitioners have ever seen a case. There are few maladies of so distressing a character and no one who has witnessed the sufferings of a patient affected by it is likely to forget them. The disease is not uncommon in Russia and in the East and it varies considerably in its incidence in different countries. The last outbreak in this country was in 1895 and 1896. The most detailed descriptions of the disease are given in some of the older text-books of medicine. Thus Sir Thomas Watson in his well-known work gives an account extending to 38 pages with records of five cases. Before the introduction of the antirabic inoculation by Pasteur the disease was invariably fatal, indeed, even now the disease, once fully established, is hopeless, so that to insure recovery after a bite from a rabid dog the treatment should be commenced as early as possible without waiting for the results of inoculation experiments. Hydrophobia is much less common in women than in men owing to the greater protection from bites afforded by the nature of their dress. In the present instance the bite presumably occurred on the bare foot of the Arab woman. The foaming at the mouth is to be explained by the frothy saliva and mucus which remain in the mouth owing to the inability to swallow, while the supposed barking like a dog is due to the accumulation of this mucus about the pharynx and the peculiar cough induced by it.

## RELIGION AND QUACKERY.

AMONG the subjects which engaged the attention of the Church Congress at its recent meeting at Weymouth Christian Science found a prominent place. This singular aberration formed, indeed, the matter of two fairly lengthy papers, the writers of which, though sound in their general conclusions, seem to have suffered in some degree from an infirmity which often befalls the students of irrational beliefs: they became unwittingly prone to justify their own interest in the matter of their discourse by exaggerating its importance and according to it a measure of serious and respectful attention to which it has no sort of claim. Under this influence the writers who discussed Mrs. Eddy's vapourings seem to have dealt with them in a spirit of charity which, however admirable in the abstract, is not without its dangers when applied to the examination of a doctrine the ascendancy of which over the minds of the unintelligent may be materially strengthened by such an appearance of concession. Thus the Rev. W. S. Swayne was concerned lest, in hastily dismissing Christian Science as the creed of fools and charlatans, we should miss some lessons of value for the physical or spiritual sides of our nature, such as the value of suggestion or the importance of a vivid sense of the Divine power. And Miss Sturge, while admitting the absurdity of certain Christian scientific excesses, was disposed to look on the movement as an expression of healthy spiritual energy which only needed better direction to be of service to religion. Now this attitude, we venture to think, is in many respects undesirable. We do not want violent tirades where mild arguments will suffice, but if the doctrines of Mrs. Eddy are, as no rational person doubts them to be, inane and blasphemous, and if, moreover, they are utilised for the ends of dangerous quackery, they have no right to the affable treatment that is properly meted out to the trivial errors of excessive zeal. The fact that these doctrines appeal to a large number of foolish people does not in the least make their silliness more respectable, nor does their semblance of remote relationship to some commonplaces of medicine or theology afford the smallest reason for imagining that they can teach us any lessons of profit. Moreover, since the assumption of a religious colour makes this creed more pernicious than the fictions of the common charlatan it is doubly incumbent on those who in any degree exercise the function of religious guides to be outspoken and vigorous in their condemnation of a sham which must be no less obnoxious to sane religious feeling than it is to the scientific mind. For this reason we regret that as these doctrines were chosen for discussion at the Weymouth meeting they were not treated with the decision and severity that their intrinsic absurdity and their dangerous influence demand.

## RAILWAY TRAVELLING IN ITALY.

"YEARS have passed," writes an Italian correspondent, "since Mr. Augustus Hare appealed, through the *Times*, to the Italian railway companies for some better treatment of the travelling public, drawing attention not only to the incessant robberies of luggage but also to the extremely defective arrangements provided at the central and intermediate stations for the exit and entrance of passengers. At such an *entrepôt* as Florence, for example, the few minutes between the arrival and departure of an express train are generally the occasion of a 'free fight' between the passengers alighting, or trying to alight, and the passengers taking, or trying to take, their places. The opportunity is a golden one for pickpockets or for the international 'hotel rat' on his way to the scene of his further operations, Mr. Hare himself having been relieved of £100 in bank-notes in the struggle to secure a seat between Florence and Rome. His letter to the *Times*, while it had the effect of diminishing robberies of luggage, not so much by increasing the surveillance along the line as by warning the traveller to put nothing of extra value in his trunk, had little or no effect in improving the comfort or convenience of the passenger. On the contrary, with the augmentation of the train-frequenting public, the discomfort and inconvenience due, mainly, to overcrowding, have proportionally increased till Mr. Edmund Gosse—as true and tried a friend of Italy as Mr. Hare—has had, in his turn, to appeal once more to the *Times* and to warn the traveller, particularly the invalid, of the scandalous unpunctuality of the arriving or departing train, involving long 'waits' in well-named 'waiting-rooms' or risky exposure to wind and weather on ill-protected platforms. This letter has so impressed the Italian public—reproduced as it has been and sympathisingly commented on by the press of all parties, from the Conservative *Nazione* of Florence to the ultra-Radical *Secolo* of Milan—that there is some hope that its remonstrances will have gone 'home'—will have gone, in fact, to the place where all reform, like all charity, should begin. Now (as he justly remarks) that the control of the railway network is in the hands of the Government, transferred from companies which, in the words of Sydney Smith, have neither a head to be punched nor a conscience to be pricked, there is some chance of the necessary improvement being effected, the 'Member of Parliament,' particularly in Opposition, having it in his power to extract explanations from the supreme authority and to exact the reforms demanded. The said 'Member,' moreover, is now in many cases a committee man in the 'Association for Promoting the Influx of the Outside World into Italy,' and he can remind the Government that the 'foreign import' is one of the country's most valuable assets, whose advent is to be encouraged by every means, not least by that of convenient and comfortable railway travelling.

The general elections, in Italy as elsewhere, are within measurable distance and intending candidates, sitting or prospective, are already warned of the heckling which they must undergo if 'railway reform' does not loom large in their addresses to constituents. Meanwhile it is felt that if the travelling world has been induced to leave Italy 'severely alone' for a few weeks, the efforts of the association above referred to and of its promotors in Parliament will have been reinforced by that signally effective auxiliary, the *argumentum ad crumenam*, or appeal to the purse. No doubt the enlargement of railway accommodation by increasing the number of carriages and the additional 'efficiency' along the line and at the points of departure and arrival will involve an augmentation of the rolling stock and a reinforcement of the *personnel*, which in turn will involve greatly increased expenditure. But this is an occasion on which, as an eminent Italian phrases it, 'parsimonia est magnum vectigal'; and if by the prevention of overcrowded trains; by such facilities for leaving or entering them as shall make neither process an object-lesson in the 'survival of the fittest'; by securing punctual departure and arrival for the passenger and safe transit for his luggage; by making, in fact, locomotion by rail something less like one of the torments not mentioned in Dante's 'Inferno'—a mighty gain will have been insured for the Italian revenue coincidently with an equal gain for the travelling world, whether bent on business, on pleasure, or on health."

## CLEANLINESS IN THE DAIRY.

AN excellent leaflet on "Cleanliness in the Dairy" has recently been issued by the Board of Agriculture and Fisheries. It contains clear instructions to dairy farmers in the methods which it is desirable to adopt in order to produce a supply of healthy milk. In dealing with the sources of bacterial contamination photographs are reproduced showing gelatin plates exposed for one minute in a badly ventilated and in a well ventilated cowshed and subsequently incubated. The cleanly management and housing of cows is insisted upon, attention being devoted to the ventilation, lime-washing, and draining of cowsheds, as well as to the daily brushing down and exercising of the cows. Stress is laid on the necessity for supplying the cows with a clean supply of pure water and it is recommended that cows should not be allowed to stand in the pond or stream where they drink, in order to avoid contamination of the water with excreta. The ideal watering place is a running stream of pure water so protected that cows cannot wade in it. Important recommendations are made as to the precautions to be observed in the operation of milking. The strictest cleanliness in every detail is enjoined. The air should be free from dust, the cow's udder should be wiped with a clean, rough, dry cloth, the milkers' hands should be thoroughly washed before commencing the operation, and they should wear clean smocks or blouses. The practice of milking with wet hands is condemned. The milk should immediately be removed from the byre and strained through muslin resting on fine wire gauze. Instructions are given for maintaining cleanliness in dairy utensils and for cooling milk which has to travel a distance before it reaches the consumer. It is further pointed out that cleanliness in the dairy is a necessary factor in the production of first-class butter and cheese. The importance of securing a supply of clean, pure, and healthy milk at the source has frequently been insisted upon in THE LANCET. The circulation of this leaflet is calculated to bring about much good. The attention of medical officers of health is called to the fact that copies for distribution may be obtained by any person free of charge and post free on application to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall-place, London, S.W. Letters of application so addressed need not be stamped.

Professor William Osler, the Regius professor of medicine at the University of Oxford, will distribute the prizes and address the students at University College, Bristol, on Thursday, Oct. 26th, at 4.30 P.M. The annual medical dinner will be held on that date, when Mr. R. W. Doyne will be in the chair, with Professor Osler as the guest of the evening. We are asked to say that if any old Bristol student has been overlooked in sending out the circulars he can obtain a ticket by applying to the honorary secretary, dinner committee, Royal Infirmary, Bristol.

THE first Harben lecture of the Royal Institute of Public Health was delivered by Dr. Thomas Oliver, physician to the Royal Infirmary, Newcastle-on-Tyne, in the lecture room of the Institute on Tuesday, Oct. 10th, and the second on Thursday, Oct. 12th. The third will be delivered on Tuesday, Oct. 17th, at 5 P.M. Dr. Oliver took as his subject: "Some of the Maladies caused by the Air we Breathe in the Home, the Factory, and the Mine, including a description of Caisson Disease or Compressed Air Illness."

THE opening lecture of the winter session of the North-East London Post-Graduate College will be given at 4.30 P.M. on Friday, Oct. 20th, at the Tottenham Hospital, N., by Dr. Percy Kidd, consulting physician to the hospital. The subject of the lecture, which is free to all qualified medical practitioners, will be Pericarditis and its Effects.

THE opening meeting of the 1905–06 session of the Chelsea Clinical Society will be held at the Chelsea Dispensary, Manor-street, King's-road, S.W., on Tuesday, Oct. 17th, at 8.30 P.M. A short introductory address will be given by the President, Dr. J. Barry Ball, on the Nasal Treatment of Asthma.

THE annual dinner of the Association of Public Vaccinators of England and Wales will be held at the Midland Hotel, Manchester, on Friday, Oct. 27th, at 6.30 P.M.

## THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT PARIS.

(FROM OUR SPECIAL CORRESPONDENTS.)

Paris, Oct. 9th.

### THE RECEPTION AT THE HÔTEL DE VILLE.

AFTER the brilliant reception given at the Hôtel Continental by the President of the Congress on the Monday evening, the Congress set to work in good earnest early on Tuesday morning. All the sections met both in the forenoon and again after lunch. There was a large attendance. Immediately after the adjournment at 5 o'clock the Congress proceeded to the Hôtel de Ville, where the members were received with all solemnity in that incomparable municipal palace. Those who had not been there before were lost in admiration at the magnificent paintings and the varied and artistic ornamentations, and they also did not fail to appreciate the delicacies which were piled up in profusion on the buffets.

The method of reception inaugurated by the present President of the Municipal Council, Dr. Paul Brousse, was repeated on this occasion, though, unfortunately, he was unwell and unable to attend. The band of the Republican Guard was placed in the Saloon of the Sciences. The ladies were provided with seats in the Saloon of the Arts, under Bonnat's celebrated ceiling depicting the Triumph of Art. Opposite the ladies and facing them were the beautiful Gobelin tapestry chairs for the municipal councillors and other authorities. In the saloon dedicated to Literature and in the

galleries of the southern court, the members of the Congress gathered and could see and hear because all these saloons have no closed doors. The vice-president of the Municipal Council, M. Henri Rousselle, welcomed the visitors and said: "Paris salutes you because you represent science. Paris salutes you because your object is the good of humanity. ..... The whole world watches you with the keenest interest as you engage in the sublime struggle which you valiantly carry forward in all parts of the world against that man-killer which is called tuberculosis and which in Paris alone is able to fill a quarter of our graves and decimates the ranks of our workers." After alluding to the sacrifices and dangers incurred by the medical profession M. Rousselle continued: "You face death, gentlemen, with sublime simplicity; this is why the Parisian population, which has always known how to appreciate heroism, honours and admires you. Paris honours you, not only in its own name and in that of the whole of France, but since this is a matter only of science, and seeing that the courtesy of the nations has been so good at times as to consider Paris as the favourite rendezvous, as the accepted capital, of the sciences and the arts,—Paris, I would add, is thus able to honour you in the name of the universe." M. Rousselle then alluded to the work of social regeneration entailed in the struggle against tuberculosis and the great interest with which the working classes of Paris watched their labours and added: "Gentlemen, in the exercise of full liberty accomplish your great mission. Paris welcomes you. Paris opens to you its institutions and all its public services. Then when the learned general staff of your pacific army shall have formulated its instructions be assured that they will evoke under the vaulted roofs of our Hôtel de Ville a faithful echo of your decisions."

In the name of the Prefect of the Seine his general secretary, M. AUTRAND, spoke next, saying that as on the previous day the President of the Republic had consecrated the Congress, so to-day the town of Paris, by its elected representative and permanent officials, wished to join in the welcome. The great masses of the people looked to the Congress to place into the hands of the disinherited and the forlorn sections of the community the means of fighting the disease.

Then followed M. LÉPINE, the Prefect of Police. He explained that it was his mission to apply and to enforce the laws enacted for the preservation of public health. On the previous day he had seen delegates from nearly every civilised nation bring to the first magistrate of France the support of their different peoples. Was this a meeting of men of science or of plenipotentiaries gathered together so as to arrange for some common measure of protection? All he asked for was not an array of theories but authorised and practical advice.

M. BARBIER closed the speeches of welcome and he spoke as President of the General Council of the Department of Seine, which includes the town of Paris. He promised that the advice given by the Congress would be propagated in the schools, the hospitals, and all other places under the control of the local authorities, and thus the General Council hoped to become the modest but useful collaborator of the Congress.

On behalf of the Congress, its President, Professor HÉRARD, was the only speaker. He expressed in the name of those who had come from all parts of the world their thanks for the welcome given by the town and city of Paris. For long they had been aware of the intelligent interest taken by the Paris Municipal Council in this great question and relied on its active assistance.

The members of the Congress were then invited to the buffets and to visit the other parts of the Hôtel de Ville, while the band played various selections. In the Lobau saloon the historical pictures of great events which had occurred at the Hôtel de Ville excited much interest and rueful remarks were overheard among some British visitors as to whether London would ever possess such a palace and be able to give receptions of so absolutely artistic a character.

### "LE MATIN" GALA PERFORMANCE.

On Wednesday another hard day's work was done, the sections meeting both morning and afternoon, but in the evening there was relaxation of a novel description. This consisted of a gala representation at the Châtelet Theatre which was organised by the popular daily political paper *Le Matin*. Unfortunately, the distribution of seats was mismanaged. For my part I found that I had been allotted a seat among "the gods," which by a strange analogy the French call *le paradis*, when it is not qualified as the *poulailler* or hen-roost. Afterwards, however, I learnt that some unscrupulous persons had laid hands on the envelopes containing the tickets and had extracted the vouchers for good places and substituted bad ones in their stead. When this was discovered I am told that a number of very good seats were kept absolutely vacant, so that during the course of the evening members of the Congress who were badly placed were transferred to these better places. The performance was a great success and reflected the greatest credit on its organisers. Many singers from the opera and other theatres took a part and amongst the other items in the programme was a representation of Molière's comedy, *Un Médicin Malgré Lui*.

### THE INAUGURATION BY THE PRESIDENT OF THE REPUBLIC OF THE MONTIGNY SANATORIUM.

Thursday was allotted entirely to excursions, the two longest of which were to Berck-sur-Mer and to Montigny-en-Ostrevent. There were other and shorter excursions to the hospital for tuberculous children at Ormesson and the sanatorium of Bligny. Arrangements had been made for special trains and the members of the Congress were able to travel to these different places at reduced rates. For my part I elected to go to Montigny-en-Ostrevent, beyond Arras and near Douai. We had a special corridor train and by starting before 9 o'clock in the morning and avoiding all stoppages we reached Arras at 11 o'clock. Here an hour was allowed for the second breakfast or lunch and Montigny was reached at 1 o'clock. This is a small, scattered, and poor village. The growing of beetroots for the making of sugar is the principal occupation in these parts of the country. The neighbouring military station of Douai had supplied a large contingent of troops which guarded all the approaches and entirely surrounded the estate on which the sanatorium is situated. This display was qualified as a guard of honour provided because the President of the Republic had consented to inaugurate the sanatorium. It was the North of France League against Tuberculosis which started the project and by holding a public lottery the means were obtained. A wooded estate of 21 hectares was purchased with a château or mansion which stands in the centre.

After a walk through the fields we found that though the château and other buildings were closed pending the arrival of the President we could examine many details of the installation. The new feature about this sanatorium is the provision of small semi-detached cottages, 12 in all, each being capable of holding two small families. These cottages are raised a little from the soil and clinkers have replaced the earth to a depth of two or three feet. Air can circulate between the floor of the cottage and the earth beneath. On the ground floor there are a kitchen and other domestic requirements and a dining or living room facing the south with a large bay window where the patient can rest in the open air and yet be under shelter. The bedroom is immediately above and disposed in the same manner. By its side is another bedroom which does not face the south and is meant for the wife or husband of the patient. Above there is yet another room where the children, if any, may sleep. Thus it is not necessary to separate the family because the father or the mother is suffering from an early stage of tuberculosis. In these cottages the patient will be charged 4*s*. a day, the wife or husband who accompanies the patient 1*s*. 3*d*. per day, the children from five to 15 years 1*s*. 3*d*. per day, and those under that age 5*d*. This charge includes house rent, food, medicaments, and medical attendance. Of course this may be paid by an insurance or benefit society or other institution and not necessarily by the patient himself. The organisation of family life in a sanatorium is undoubtedly a new departure. But there are besides two pavilions, one for single men and the other for single women. These pavilions have dormitories and each accommodates 26 patients. Then there is a small house for the isolation of infectious cases as well as a farmhouse whence is organised the cultivation of the estate. It is thought that a little light agricultural work will be of benefit to some of the patients. Taken altogether, and excepting the cottages for families, I do not know that there is much to be said about the construction of this sanatorium. Of course, every endeavour has been made to round off all angles and to employ such paint, polish, and enamel as can be frequently washed. What is remarkable is the fact that

the estate deals with its own sewage. As the land is absolutely flat it has been necessary to employ a Shone ejector to raise the sewage and to throw it into a septic tank whence it is filtered over clinkers and coke. Some of the water will be used for cultivation of vegetables on the estate.

Shortly after 2 P.M. M. Loubet arrived, accompanied by M. Casimir Perier (a former President of the Republic), M. Léon Bourgeois, two Cabinet Ministers, and several generals, senators, and deputies. The President of the Republic was met, of course, by the leading local authorities and conducted round the sanatorium by Dr. Calmette, director of the Pasteur Institute at Lille, and one of the members of the executive committee for the erection of the sanatorium. Doubtless the sanatorium will be a great boon to the neighbourhood and as such elicited the praises of the President. When the squalor and ugliness of the mining villages and agricultural centres of this department are considered it will be a pleasant change to inhabit this sanatorium. But judged in the abstract the sanatorium does not provide some of the most essential requirements. The climate and the soil are most unsuitable. There is no shelter from northerly winds and it will be almost impossible to deal satisfactorily with such a damp clay soil. There are no forests or hills at hand where the patients might take long walks and increase their appetite and vigour. In the open-air galleries cupboards are provided to store the cushions and rugs at night so that they should not become damp. But should this suffice for this purpose, on the other hand the packing closely together of these objects is not very desirable. In the dormitories, each containing six beds, the window space is not very large and there are no means of creating a through draught.

After visiting the whole estate M. Loubet entered the mansion which will now provide for the various services of the sanatorium as well as be the residence of the physician. Here some speeches were made and M. Loubet said that he was always happy to encourage such enterprises. All should help to provide the necessary means for such a sanatorium; the large mining companies, the employers of labour, everyone must render assistance, and by so doing they would become moral and worthy citizens. Democratic laws were destined to make the Republic more just and gentle, and it was for them all to spread on every side the spirit of fraternity. Happiness would reward all who helped, especially Dr. Calmette, who was the soul of the institution and whose labours had made it spring from the earth. The President then distributed some decorations and medals to the architect M. Hamez; to Dr. Nerrhaeghe, chief of the clinic at the Lille Faculty of Medicine; and to others. After this ceremony the members of the Congress followed M. Loubet back to the station and took the special train for Paris. An immense crowd of people had assembled from many miles around and were freely admitted to visit the sanatorium when the inauguration had been concluded. The first patients are expected in a few days.

### THE EXCURSION TO BERCK-SUR-MER.

While a number of members of the Congress were participating with the President of the Republic in the inauguration of the Montigny sanatorium about 100 visited the Rothschild hospital at Berck-sur-Mer, where they were entertained to lunch. Dr. Paul Guillon of Paris, Dr. Denneville of Lausanne, and Dr. Durand of Bordeaux delivered speeches to thank the Baroness de Rothschild and her son Dr. H. de Rothschild for their cordial reception and the great and good work which they were doing at Berck. The Baroness was deeply moved as she acknowledged these speeches, while Dr. H. de Rothschild said in his reply that even if Professor von Behring was going to cure all cases of tuberculosis in a year's time the Rothschild hospital at Berck would still remain open, for it could render service for the treatment of many other sorts of disease.

### THE EXCURSION TO ORMESSON.

Another party of about 100 members of the Congress went to Villiers-sur-Marne, Ormesson, and Noisy-le-Grand, and visited in detail the three hospitals there devoted to the treatment of tuberculosis. Among the visitors were Dr. Müller and Professor Heubner of Berlin, Dr. Theodore Williams and Dr. F. J. Wethered of London, Dr. Ferreira of Lisbon, and Dr. Radovitch of Bucharest. They were received by Dr. Blache and Dr. Vacquier and were entertained at lunch at Noisy. Various congratulatory speeches were delivered at dessert.

### THE VISIT TO BLIGNY.

About 100 more members of the Congress went to the Bligny sanatorium which is only 35 kilometres from Paris and is pleasantly situated in the valley of Chevreuse on the borders of a large park. There are 120 beds for early cases of tuberculosis. 56 of these beds are reserved for railway servants by the railway companies. The visitors were received by the Prince d'Arenberg, Dr. Louis Guinard, the Viscountess de Vernaux, Professor Faisans, the Count de Caramen, and M. Derbannes, who are all concerned in promoting this semi-charitable enterprise. There was a lunch and, of course, more congratulatory speeches were delivered.

### THE SUBSCRIPTION BANQUET.

After all these trips made in so many directions the Congress resumed its sittings and worked hard both in the morning and the afternoon on Friday. The only diversion was a subscription banquet held in the evening at the Galerie des Champs-Elysées. M. Ruan, Minister of Agriculture, presided, and Colonel Meaux Saint-Marc attended to represent the President of the Republic. M. Casimir Perier, former President of the Republic, was present and also M. Léon Bourgeois. At the opening of the banquet M. Ruan read out the following telegram addressed by the King of Spain to the President of the Congress:—

The King, sincerely grateful for the amiable souvenir expressed by the Congress, hopes that the expected light will arise from the gathering together of that illustrious assembly so as to do away with the terrible disease tuberculosis.

At dessert Professor HÉRARD, as President of the Congress, was first to speak and thanked the foreign guests for having responded to the invitation of the French nation.

Sir WILLIAM BROADBENT (England) read a telegram from the Prince of Wales, in which His Royal Highness expressed his pleasure at the number of British medical men attending the Congress, the sittings of which had been opened by the President of the Republic, and expressed the hope that the labours of the Congress might lead to important results. Amongst the subsequent speakers were Professor VON LEYDEN (Germany), Professor VON SCHROETTER (Austria), Professor BACCELLI (Italy), and Signor DELCARPO (Spain).

Dr. GEORGE OGILVIE (England) delivered the following speech:—

MONSIEUR LE PRÉSIDENT ET MESSIEURS,—Hélas! nous voici à la dernière étape de notre charmant séjour à Paris. Messieurs, soyez assez aimables pour me permettre de vous parler en votre belle langue. Le malheur est que je ne me sente guère à l'aise quand je parle en français, car j'ai toujours peur de m'exprimer de façon à ne point rendre exactement le fond de ma pensée, qui est pourtant très claire en mon cerveau.

Je ne suis pas un poète, Messieurs, mais de nos jours les faits et la fiction sont tellement mélangés qui le vrai lui-même devient un sujet de doute. Que dire? On a affirmé que c'était folie de trouver de la sincérité dans les paroles prononcées entre la poire et le fromage. Il est probable que celui qui a ainsi parlé était un profond dyspeptique, qui avait besoin d'un traitement énergique.

J'ai toujours eu une grande sympathie, et j'ajouterai même de l'admiration, pour ce douanier d'un écrivain américain, qui faisait claquer sa langue en pensant à grand dîner auquel il avait assisté quarante ans auparavant. Il devrait jouir d'une excellente santé, et être capable de savourer les plaisirs sains et pacifiques de notre haute civilisation, et de discerner entre un bon dîner, et un mauvais dîner. Après tout, Messieurs, la mémoire des sens n'est pas une mauvaise mémoire à conserver vivace. Les tissus adipeux non plus, ne sont pas une mauvaise chose. Si Calvin avait été gras, il n'aurait pas envoyé Servet au bûcher. Néron et Caligula étaient maigres—étiques même. La cruauté et la corpulence sont absolument incompatibles, et depuis que le monde existe, c'est la dyspepsie qui a toujours été la mère des actions les plus diaboliques et les plus perverses. J'ai dit, Messieurs, je suis en admiration devant ce douanier—mais combien vaut-il mieux suivre les conseils du sage Mentor à son élève Télémaque—"Il faut borner vos repas aux viandes les meilleures, mais apprêtées sans aucun ragoût ..... et prenez garde au vin, c'est la source des plus grands maux parmi les peuples." Messieurs, si nous suivons ces excellents avis, nous serons les élus, et nous atteindrons le règne millénaire, et vous savez fort bien que ce sera là l'ère de la prospérité puisque chacun de nous sera rentier, avec mille livres de rente—et puis! .....

Messieurs, nous nous sommes réunis pour étudier les maladies tuberculeuses, et trouver quelque moyen de soulager nos frères. Sans nul doute il sortira de cette réunion de savants, des résultats sérieux. Ne dit-on pas d'ailleurs que du choc des idées jaillit la lumière. Patience donc! Maintenant, Messieurs, permettez-moi de vous conter une petite histoire curieuse d'un tuberculeux. Un jour, un homme se présente à l'hôpital. Il avait, ma foi, l'air bien portant. "Qu'avez-vous, mon ami?" Il répond d'une voix éraillée: "Docteur, le poumon gauche est complètement pure." J'étais un peu étonné, et je lui dis: "Eh bien, mon ami, le poumon droit?" "Le poumon droit, docteur, résonne comme les cloches de Corneville." Messieurs, le diagnostic était très simple—il souffrait sans doute du délire des grandeurs pulmonaires, d'origine, grandpère para-tuberculeux. Continuez à rire, Messieurs, ça aidera à votre digestion, et une bonne digestion est toujours la preuve d'une conscience pure.

Maintenant il faut que je termine, car vous savez, Messieurs, après ma visite de mai dernier, lorsqu'un Ecossais se lance, vos salles, même vos boulevards, ne sont pas assez larges pour arrêter son essor. Je ne dirai donc qu'un mot, non seulement de ma part, mais aussi de la part

de mes collègues d'outre Manche et de toutes les nationalités ici réunies—la science, Messieurs, n'ayant pas de frontière.

Je citerai ce mot de l'Amiral Caillard quand il a quitté les rives fleuries de l'Angleterre, avant qu'il traversât le petit fil d'argent qui sépare nos deux pays. Il signala du haut de son grand mât cette phrase mémorable, qui peut justement s'appliquer aux circonstances présentes—Remerciements les plus forts, les mêmes espoirs.

As President of the Permanent Committee against Tuberculosis M. LÉON BOURGEOIS delivered an eloquent speech insisting on uniting action to science. He was, therefore, especially glad that most Governments were officially represented at the Congress. Then he alluded to the resolution carried that day expressing the desire that in every country the law should enforce the expropriation of unhealthy dwellings. Such a law would be the most useful social gift that could be made to humanity.

M. CASIMIR PERIER, in his speech, extolled the magnificent spectacle and meaning of the present International Congress.

In conclusion M. RUAN, speaking on behalf of the Government of the Republic, said that he glorified the modern sentiment of solidarity which had replaced the struggle for life by union for life. He then raised his glass in honour of all the Sovereigns who had sent representatives to the Congress, as also of the President of the Republic who possessed truly French qualities, the sense of justice and the spirit of kindness.

## THE CLOSING CEREMONY.

### PROFESSOR VON BEHRING'S EXPLANATION.

On Saturday morning the sections met for the last time and at two o'clock was held the solemn general meeting for the closing of the Congress. This was a more simple ceremony than that observed at the opening of the Congress, though held in the same place. There was, however, no guard of honour, no display of uniforms and orders, and but few persons were present on the platform other than the officials of the Congress. On the other hand, and from quite a different point of view, the meeting was much more interesting. For some days before, and in consequence of an article published in *Le Matin*, the press and the public had been discussing the supposed discovery of a cure for tuberculosis. As Professor von Behring was the author of this discovery it was not possible to treat the matter lightly and thus hope mingled with doubt. Now it was announced that he would himself make a statement and great were the crowd and the anxiety to hear what had really been done and discovered by the distinguished bacteriologist. Not to increase the suspense Professor HÉRARD, who presided, at once called upon Professor von Behring to make his statement which he read out in German. The very feeble applause that followed showed clearly how few persons present understood German. But a translation had been written and printed in French and this was read out admirably by Mr. FUSTER who knew exactly how to accentuate the important points. The result now was very different; there was real and ringing applause, especially at the end, when Professor von Behring rose to bow his acknowledgments.

After this oration Professor HÉRARD thanked Professor von Behring in the name of the Congress and expressed the ardent hope that the experiments about to be undertaken would prove successful. We give below Professor von Behring's statement:—

"In the course of the last two years I have succeeded in recognising with certainty the existence of a curative principle completely different from the antitoxic principle which I described 15 years ago. This new curative principle plays the essential part in the immunising action of my 'bovovaccine,' which for the past four years has proved successful in agricultural practice in the struggle against bovine tuberculosis. This principle is based on the impregnation of the living cells of the organism by a substance emanating from the virus of tuberculosis which I term TC. When the TC has become an integral part of the cells of the organism of the animals treated by it, and is metamorphosed by those cells, I designate it by the formula TX. In the bacillus of tuberculosis the TX, or, more precisely, the TC pre-exists as an agent endowed with a great number of extraordinary properties. This agent fulfils in the tubercle bacillus the function of a formative substance. It also possesses fermentative, and specially catalytic, qualities. This agent has a selective action with regard to other substances, a phenomenon which has been termed 'adsorption.' Moreover, under certain conditions it possesses assimilating qualities. In a word, it represents the 'quasi-vital principle' of the bacilli. In my opinion in the process of immunising bovine animals against tuberculosis the TC of the bacilli is freed from other substances. It exercises a symbiotic action in the interior of the tissues, especially upon the cellular elements which have their origin in the germ centres of the lymphatic tissue. The presence of the TC is the cause, on the one hand, of hypersensibility to Koch's tuberculin, and, on the other, of the protective reaction against tuberculosis.

The road has been long by which, after having overcome many obstacles, I have arrived at the conception indicated above of the nature of antituberculous immunisation. This conception of a cellular immunity is quite different from the antitoxic humoral immunity, and I wish to state that I should not have attained to it had it not been for an intimate knowledge of Metchnikoff's researches on phagocytosis. If I endeavoured to present in detail proofs in demonstration of the exactness of my conception I should be obliged to detain you here several hours. I have partly described them in the first portion of a book, which will be entitled, 'Phthisiogenetic and Phthisiotherapeutic Modern Problems Enlightened by History.' Several passages of this first part have just appeared in *Tuberculose* for September, 1905. I only wish now to attempt to describe the nature and mode of action of the new therapeutic method which is the result of my scientific studies on tuberculosis. This new method is, I believe, destined to protect men threatened with phthisis against the dangerous consequences of tuberculous infection. I consider it a great honour to be able to make a brief communication on 'A Means of Contending Against Tuberculosis by a New Remedy' before the general assembly of the Paris Congress. I assume that my method of vaccination against bovine tuberculosis is known. Without any insistence on my part it will be admitted that I have considered all the possibilities of the application of this procedure for the purpose of combating tuberculosis in man. My experience has firmly decided me on definitively abandoning the idea of introducing living tubercle bacilli into the human body with a therapeutic object. Anti-tuberculous treatment in man, therefore, begins, as far as I am concerned, with the discovery of the remedy of which I am about to speak.

After the sketch given above of the mode of immunisation against tuberculosis it will be understood without further details why I have endeavoured energetically and unwearyingly to spare the organism the work always long and dangerous of the elaboration of the TC. I have succeeded by experiments *in vitro*. I have substituted active immunisation, to employ Ehrlich's expression, for passive immunisation. I can assure you that I have rarely felt more pleasure in my life than during the days, weeks, and months in which the causal link which unites vaccination with immunity has become manifest to me with ever-growing clearness, thanks to the reiterated observation of innumerable experiments on animals. One enigma after the other as to the nature and the mode of action of the anti-diphtheritic serum has been solved. Condensing into a few words the results of my labours, I may say that in order to free the TC from the substances which hinder its therapeutic action it is necessary to distinguish three groups of bacillary substances:

1. A substance soluble only in pure water, possessing a fermentative and catalytic action. From this substance, which is soluble in water, are derived the toxic elements of Koch's tuberculin. This substance has all the chromophilous, physical and chemical qualities of 'volutine' described by our Marburg botanist Arthur Mayer. I call this substance TV. To convey an idea of the toxic power of TV I may say that a gramme of this substance in a dry state is more powerful than a litre of Koch's tuberculin.

2. A globulin soluble only in a neutral salt, for example, chloride of sodium at 10 per cent. This substance is named by me TCL. It also is toxic, after the manner of Koch's tuberculin.

3. Several non-toxic substances, which are soluble only in alcohol, ether, chloroform, &c.

When the tubercle bacillus has been freed from these three groups of substances there remains only a body which I designate as 'rest bacillus.' The rest bacillus still possesses the form and the staining reactions of tubercle bacilli. By means of suitable preparations it can so be modified as to become an amorphous substance, directly absorbable by the lymphoid cells of the guinea-pig, rabbit, sheep, goat, bovine animals, and horses. The amorphous substance is elaborated and metamorphosed by the lymphatic cells of these different

animals and these cells become oxyphile or eosinophile. The condition of immunity of the organism develops contemporaneously with the metamorphoses of the cells under the influence of the TC. A fundamental fact is that the TC, although it is a substance that cannot be reproduced, possesses the power of giving origin to tubercle. The tubercle thus produced does not undergo caseation and never softens. It corresponds exactly to 'Laennec's granulation tuberculeuse.' Under certain conditions the TC can also produce the 'gray infiltration' and the 'gelatiniform infiltration' of Laennec.

By means of experiments on different mammals I have been able to satisfy myself that the TC, pre-existing, as I have said, in tubercle bacilli, can be elaborated *in vitro* in such a manner as to be capable of being applied as a remedy which can be employed without danger to the treatment of disease in man. The therapeutic portion of my book, which should appear next year, will only see the light when the therapeutic efficacy and the innocuous nature of my new remedy have been demonstrated by clinicians better versed than I am in the knowledge of the individual varieties of pulmonary tuberculosis and in its prognosis. On the other hand, it seems to me necessary that *savants* working in other laboratories should test the therapeutic action of my remedy on animals and should note the fact that a therapeutic agent of such value has not been known before this date. You are aware that hitherto Koch's tuberculin and his new tuberculin (TR), the serum of Maragliano, that of Marmorek, as well as several other preparations described out as specifics, have, according to their inventors, a preventive or curative efficacy; but you also know that many subsequent observers have not succeeded in obtaining such good results, especially in the guinea-pig. I hope to be more fortunate and that those *savants* to whom, after my return to Marburg, I shall entrust my remedy, so that they may experiment with it, will obtain in their laboratories as good, and even better, therapeutic results as myself.

I ask you not to forget that the communication which I am making to-day has a singular resemblance to that which I made in 1890 on a 'New Remedy against Diphtheria.' My conviction of the great importance of that discovery has, in the course of these 15 years, been confirmed in a striking manner throughout the whole world. But after my communication not less than four years passed by before practitioners put trust in the remedy. I might, indeed, have had to wait still longer for recognition of the accuracy and importance of my scientific assertions if my great friend, M. Emile Roux, at Budapest had not taken his stand with me in combating diphtheria, 'the killer of children.' How long a time will yet roll by before the discovery and utilisation of my new remedy against tuberculosis receive the public recognition which will establish its practical value? I know not. Many factors may intervene—my delight in work and my activity, my skill as a tactician, and also my good fortune. May it give me a companion in the struggle of the value of Roux, having the same conquering strength and the same disinterestedness which is proof against suspicion. And I hope that the next congress on tuberculosis will take note of the great progress achieved in the struggle against human tuberculosis."

The Presidents of the four sections now submitted to the Congress the resolutions that had been carried in their sections and these were without exception confirmed by the show of hands of the entire assembly. There were not many resolutions from the first three sections, but the Fourth Section had a formidably long list of reforms to propose. Nevertheless, there were no protests and some very radical proposals were accepted without a murmur. Of all these resolutions the one condemning alcoholism as a cause of tuberculosis was most loudly applauded.

Dr. BLISS, as the official representative of the United States National Association against Tuberculosis, and Dr. JACOB, as secretary of the same association, both in turn invited the next Congress to meet in the United States and read despatches to show that they were authorised to make this invitation by their Government.

On being put to the vote it was unanimously decided that the next International Congress against Tuberculosis should meet in the United States in 1908. It was generally understood that the object was to hold this meeting before President Roosevelt's tenure of office had expired.

A few of the foreign representatives each in turn and on behalf of their respective nationalities rose to express their thanks. As usual, these speakers were selected for their eminence in science and not for their oratorical powers. The result was that their speeches were not clearly heard by the audience. Of course, the effect was quite different when Professor BACCELLI rose, for though he spoke in Italian each word was so perfectly intonated that only a slight acquaintance with Italian was necessary in order to grasp his meaning. This speech revived the drooping spirits of the assembly and the Congress was brought to an end with the words of charity, concord, and solidarity ringing through the air. Professor HÉRARD closed the proceedings and in spite of his 86 years bade us all *au revoir* in three years' time.

### VISIT TO VAUX-DE-CERNAY.

On the same afternoon a large body of members of the Congress responded to the invitation of Dr. Henri de Rothschild to visit his estate at the Abbey of Vaux-de-Cernay. Numerous brakes were provided to convey the visitors from the station of Parray to the estate where they were most graciously received by the Baroness de Rothschild and guides were provided to show the way through the extensive park and the magnificent ruins of the abbey. A lunch was served and the very pleasant visit was so organised that the whole party were back in Paris by 7 o'clock.

### THE BANQUET AND RECEPTION AT THE ELYSÉE.

In the evening M. Emile Loubet, President of the Republic, entertained at dinner about 100 members of the Congress who were for the most part official representatives of various Governments. M. Casimir Perier sat on Madame Loubet's right and Professor Schjerning on her left. Professor Hérard sat on M. Loubet's right and Dr. von Schroetter of Vienna on his left. At dessert M. LOUBET proposed the following toast:—

Gentlemen,—At the moment when you are about to leave us after having brought to this Congress, which will constitute a date in the history of science and social progress, the concourse of your enlightenment, your experience, your devotion, I cannot allow you to terminate this meeting without proposing a toast to all the sovereigns, to all the chiefs of States and Governments by whom you have been delegated. I raise my glass in their honour and I make it a matter of duty to associate their healths with a cordial wish for the prosperity and happiness of the nations who have placed them at their head. I hope that the next congress, to be held in the United States, will add a new contribution to the work of civilisation and humanity of which you are the representatives and that we shall have the satisfaction of seeing the ripening of the seed you have had the merit of sowing.

The dinner was followed by a reception to which all the members of the Congress were invited and most of them attended. The Elysée, as a palace, is a modest structure and was not intended to compete with royal residences. Indeed, the saloons of the Hotel de Ville surpass in every respect those of the Elysée. It is in summer, when the beautiful gardens and trees are illuminated, that the Elysée is seen to the best advantage. Nevertheless, a reception in the Palace of the Elysée is always a brilliant sight and it is very pleasant for the members of a great congress to meet in the magnificent apartments of the Chief of the State. By the way, so many lingered to the last hour that it is evident that they thoroughly appreciated the privilege and the honour which had been conferred upon them.

### THE VISIT TO THE RIVIERA.

The reception at the Palace of the Elysée may be considered as the last scene of the Congress—at least, if it is taken as a whole; for there is yet another visit, though not for all the Congress. The number participating is necessarily limited. This is offered to the Congress, though it is not, strictly speaking, a matter of the Congress. It consists of a special train which the newspaper *Le Journal*, with the coöperation of the Paris, Lyons, and Mediterranean Railway Company, has placed at the disposal of a certain number of members of the Congress. This train left Paris at 7 o'clock on Sunday evening and was due at Hyères at 9 o'clock on Monday morning. Here a visit was to be paid to the sanatoriums of the Mont des Oiseaux and San Salvadour. In the afternoon there was to be a reception by the municipality and Medical Syndicate of Hyères, followed by a banquet. Then on Tuesday the train is to proceed to Monte Carlo, where the visitors will be entertained by the Society of the Sea Baths of Monaco, which means the Casino, and an artistic representation will be given in their honour. At the fall of the curtain comes what is graphically called the "dislocation" and everyone will go where he chooses

and at his own expense. Up to this point the members will only have had to disburse for minor expenses the sum of £1, and they can then obtain return tickets for half the price of the single journey. With these tickets they may stop at any of the numerous stations on the Riviera or historical towns of Provence which they may desire to visit. Thus what is ordinarily a very expensive journey will be accomplished under very favourable and economical conditions. Of course, there were many more applicants for places than could possibly be accommodated in the train and the selection from amongst them has been a delicate and difficult matter.

### THE ACTION OF THE POLITICAL PRESS.

What is peculiarly remarkable about this Congress is the action of some of the daily political newspapers. *Le Figaro* gave a reception and fête at its offices; *Le Matin* arranged a gala representation at the Châtelet Theatre; and *Le Journal* organised the notable excursion all the way to the Riviera, which is referred to above. The expense which these newspapers has incurred must be very considerable and I do not remember that anything of the sort has ever been done by the political press at previous congresses. It has served a good purpose as propaganda, for, of course, the papers which thus entertain the Congress have given the fullest possible publicity to the work of the Congress and most of the other newspapers have followed their example. As the struggle against tuberculosis is so much a struggle for better sanitation the more the public is enlightened on these matters the easier will it be to cope with, and to remove, the predisposing causes.

## THE SECTIONS.

### OCT. 3RD.

Whatever may be the general outcome of the Congress in aiding the fight against tuberculosis the purely scientific results have been marred by the circumstances in which the meetings have been held. This was in no way the results of the organisers of the Congress; they did everything possible to facilitate the comfort of those taking part in the discussions and to make provision for the due carrying out of the programme. The fault lay in the popularity of the Congress; there were far too many members (over 3000). The meetings were held in rooms ill adapted for the purpose; they were designed for picture galleries and consequently were bad for acoustic properties. Owing to the number of members these rooms were densely overcrowded and it was very difficult to hear most of the speakers. Their remarks, too, were obliged to be condensed greatly. Doubtless when the contents of the large volume of reports can be fully studied the real value of these communications will be more fully appreciated.

In Section 1., Medical Pathology, the whole of Tuesday morning was fully occupied in a somewhat fruitless discussion on

*The Acid-fast Bacilli (including the Varieties of the Tubercle Bacillus).*

It was unfortunate that the second section (Surgical Pathology) was discussing practically the same subject at the same time. This waste of time and energy was speedily recognised and arrangements were made for a combined meeting of the two sections in the case of similar conditions again arising. At the same time, on account of the large number of papers to be read before the section a subsection was formed for subjects dealing with therapeutics.

Dr. PAUL COURMONT (Lyons) read a communication entitled

*The Acid-fast Bacilli contrasted with the Bacilli of Tuberculosis.*

He remarked that if a typical culture of the tubercle bacillus be compared with one of the acid-fast bacilli the differences were very clear. He had, however, compared cultures of the latter with homogeneous cultures of Koch's bacillus, when he found that these differences were far less marked. The homogeneous cultures presented characters plainly visible to the naked eye, they possessed chromogenic powers, and approached very closely in appearance to cultures of most of the acid-fast organisms. He had not been able to cause liquid cultures of the acid-fast bacilli to be agglutinated by the serums obtained from the homogeneous infections; on the other hand, many of the homogeneous tubercle bacilli were not agglutinated by the same serums. Dr. Courmont maintained that although the acid-fast bacilli were only capable of producing conditions similar to tuberculosis under exceptional experimental conditions, on the other hand, it was possible to diminish the virulence of certain homogeneous cultures of Koch's bacillus to such an extent as to render them as inactive as cultures of the acid-fast organisms. Any essential difference did not exist. He had arrived at the conclusion that it was impossible actually to prove by any trustworthy criterion that certain acid-fast bacilli were not, in fact, saprophytic tubercle bacilli, or to show that the former might not acquire under certain conditions the pathogenic and other properties of the typical Koch's bacillus.

Professor J. CANTACUZENE (Bucharest) read a paper on

*Researches on Experimental Infection by the Para-tubercle Bacillus.*

He observed that in spite of the numerous observations which had already been made on this subject a certain number of points still remained undecided. He gave the results of his researches in this direction. In young cultures of this acid-fast bacillus (from two to four days old) a considerable number of units were found (often one-half of those present) which after double staining by fuchsine and methylene blue took on an intense blue colour. The number diminished with the age of the culture. In cultures 15 days old they were only occasionally met with. Certain of the young bacilli, then, did not possess the power of resisting the action of acids. Injections of acid-fast bacilli were made into the peritoneal cavity of an animal, an injection of a few drops of dilute lactic acid having been previously made. The animal died in 20 hours from a general septicæmia produced by the Timothy bacillus. Colonies isolated from the blood yielded bacilli which under the microscope (after a few days' sojourn in an incubator) were seen to consist of bacilli which assumed a blue colour after the usual double staining process; bacilli resisting the action of acids were exceptional. Branching forms in every respect identical with those found in connexion with tuberculosis were fairly frequently met with in abscesses which formed in the peritoneum. He had several times observed actinomycotic forms which grew very luxuriously, especially in the giant cells found in the alveoli of the lungs. Professor Cantacuzene gave some details of his technique which was designed to overcome some of the difficulties which had been experienced by certain observers. He found that by using pure acetone as a decolourising agent after fuchsine in place of the mineral acids very clear and excellent specimens were thus obtained.

One of the principal papers was by Professor ALBERT ROBIN on

*The "Soil" as a Factor in Tuberculous Conditions and the Methods of Treatment.*

He remarked that since the discovery of the tubercle bacillus the principal efforts of therapeutics had been to try to destroy the pathogenic organism. Owing to the want of success which had attended the administration of drugs the sanatorium method had been heartily welcomed but he urged that care must be taken not to carry enthusiasm too far and so to lead to scepticism in the value of other therapeutic measures. He asked, Are there not indications pointing to the fact that "the soil" was the principal etiological factor which should receive attention? From experiments it had been shown that the "respiratory exchange" was increased in tuberculous subjects to the extent of from 25 to 80 per cent. This increase was found both in acute and chronic cases. It existed in all stages of the disease and persisted even up to the time of death. This exaggeration of the respiratory exchange had been considered as a defensive reaction and had been regarded as a manifestation of a recent attack by the tubercle bacilli. Its permanence, however, in all stages of the disease constituted a serious objection to each of these hypotheses. He brought forward arguments to show that observations on this phenomenon might prove useful in actual practice: (1) in 30 children of tuberculous parents the respiratory exchange was increased in 18 instances; (2) in a large number of individuals born of tuberculous parents who had reached the ages of from 40 to 50 years without contracting the disease the respiratory exchange remained normal or was even decreased; (3) alcoholism, overwork, intellectual and physical, and careless living, all conditions predisposing to tuberculosis, increased the respiratory exchange; (4) patients subject to arthritic troubles exhibited a normal or diminished respiratory exchange; (5) such subjects transmitted to 70 per

cent. of their descendants this characteristic; and (6) if such individuals acquired diseases predisposing to tuberculosis (pleurisy, pneumonia) the respiratory exchange showed a tendency to increase. A tuberculous subject required more calories than a healthy individual and it was necessary that he should be furnished with the excess of oxygen required so as to protect the tissues from undue changes produced by the chemical processes occurring in them. The results of Professor Robin's researches had shown that there were agents, both drugs and certain physical methods, which were capable of reducing the respiratory exchange. For instance, cod-liver oil reduced it 10 per cent.; arseniate of soda, 26 per cent.; cacodylate of soda, 22·8 per cent.; and adrenalin, 13 per cent. He then went on to remark on certain other conditions connected with the tuberculous state, more especially as to the "co-efficient of demineralisation" which was more raised during the pretuberculous period than in the later stages of life. Every individual who presented a tendency to expire too much carbonic acid (which showed that too much oxygen had been "fixed") or showed that the mineral elements of the body (as indicated by an examination of the urine) were being too rapidly destroyed might be considered in danger of becoming tuberculous. Professor Robin considered that pulmonary tuberculosis was a disease which was evolved in two periods—one he called "consumption"; the other consisted of an infection. A person might acquire the tuberculous infection without passing through the first stage but "consumption" was a preliminary period of very great gravity. It could, however, always be cured. If infection actually occurred then it frequently defeated all their efforts of treatment. It was necessary then to recognise the condition whilst it was curable. An important element in treatment was the use of anti-bacterial medicaments. Every effort must be used to improve the soil, so that the bacillus might not become engrafted upon it. Systematic treatment according to the needs of any particular patient might also be adopted. In explanation of Professor Robin's communication it may be remarked that the English equivalent of "consumption" would be a "pre-tuberculous stage."

Amongst the papers read in the First Section on the subject of the relations of the tubercle bacillus to the other acid-fast bacilli one of the most interesting was that by Dr. LYDIA RABINOWITSCH (Berlin) on

*What Relations Exist between the Causal Factors of Tuberculosis in Mammals (especially in Human Beings, Cattle, and Apes) and that of Birds and Cold-blooded Creatures?*

After an elaborate series of investigations Dr. Rabinowitsch had arrived at the following conclusions: 1. No precise difference which could be considered constant existed between the pathogenic organisms of tuberculosis in mammals, birds, or cold-blooded creatures respectively either in respect to morphological characteristics or in their reactions to staining reagents. 2. (*a*) Differences in regard to cultures existed between the tubercle bacillus as found in man and in oxen only in so far as that those from the latter were more difficult to cultivate and, especially in the first generation, the growth was much slower than was the case with the tubercle bacilli obtained from man. Sometimes, however, the reverse condition held. It was uncertain how far the nidus helped to bring about these differences in growth. (*b*) There were well-marked differences to be noticed in cultures obtained from tuberculosis in mammals and birds respectively, although occasionally those obtained from birds more closely resembled those derived from mammals. (*c*) The cultures obtained from cold-blooded creatures differed from those obtained from mammals and birds not only in general appearance but mainly on account of their attaining their maximum growth at lower temperatures. 3. The tubercle bacilli obtained from mammals could be divided into two types, the bovine type and the human type, the characteristics of the two depending on the cultural properties and their varying virulence in different animals. Thus, guinea-pigs were equally susceptible to either type. Rabbits were more easily affected by the bovine type than by the human type. Similarly, oxen were less influenced by tubercle bacilli of the human type than by those of the bovine type, although sometimes less virulent cultures of the latter were met with which had little or no effect in producing tuberculosis, and the same might be said of cultures of the human type. 4. Guinea-pigs could be successfully inoculated by material obtained from tuberculous birds, such as pure cultures, but as a rule such cultures were less virulent than those procured from mammals. Rabbits were almost as susceptible to the tubercle bacilli obtained from birds as to those of oxen. Mice were not so easily affected by bacilli derived from birds as by those from oxen but quite as readily by those of the human type. Oxen varied much in the way in which they responded to tubercle bacilli obtained from birds. 5. The bacilli of tuberculosis occurring in cold-blooded creatures were not as a rule pathogenic in regard to warm-blooded creatures; the reverse also held good. 6. In man the human type of mammalian tuberculosis was usually found, but occasionally, and especially in children, the bovine type occurred. In many cases both types co-existed. It was possible that after a long sojourn in the human body the bovine type changed to the human type. In very rare instances the presence of the tubercle bacillus of birds was noticed in human tuberculosis. (Dr. Rabinowitsch had only observed one case.) 7. In oxen the bovine type was usually found; in a few cases the same form of tubercle bacilli that was found in birds was noted. 8. In pigs and horses the avian type of tuberculosis was occasionally seen. 9. In apes (36 cases) the human type was most common, several times the bovine type was observed and occasionally the type found in birds. 10. Out of 120 tuberculous birds of various kinds which were studied in the Berlin zoological gardens 70 cultures were isolated, of which three exhibited the cultural and pathogenic properties of the human type. (*a*) In tuberculosis occurring spontaneously in parrots both the bacilli of mammalian and of avian tuberculosis were found. Parrots were successfully inoculated with the human, bovine, and avian types. (*b*) Of the other varieties of birds, after several trials, only canaries were found to be susceptible to mammalian tuberculosis. (*c*) Mice and rats were frequently found to be infected with avian tuberculosis and were capable of conveying the disease to others of the same species. 11. There existed an interchangeability (Wechselbeziehungen) between the agglutinating powers of the tubercle bacilli of mammals, birds, and cold-blooded creatures respectively. 12. Besides the common tuberculin reaction which might be considered as a "group reaction" (Gruppenreaktion) a relationship of immunity existed between the tuberculosis of man, oxen, and birds. 13. From these observations and especially on the ground of the frequent interchangeability of tuberculosis of mammals and birds the pathogenic bacilli of the same must in the animal kingdom be regarded as varieties of one kind of bacillus adapted to different species of animals, amongst which the human and bovine types stood nearest in relation to one another.

Dr. A. JOUSSET (Paris) read a communication on

*Tuberculous Bacillæmia.*

He said that he had examined the blood of 50 patients who were suffering from pulmonary tuberculosis by a complex process in which three methods of research were employed. These were inoculation, inoscopy, and cultures. This plan was adopted in order to avoid the errors which might arise from the presence of other acid-fast bacilli. He had arrived at the following conclusions: In the case of chronic pulmonary tuberculosis the blood only exceptionally was found to contain bacilli. In acute or subacute pulmonary tuberculosis the blood contained bacilli, often in large numbers; this result was obtained in nearly half the cases examined. This phenomenon most commonly occurred in connexion with caseous pneumonia. It seemed then that, contrary to previous theories, the presence of bacillæmia depended more on the extent of the pulmonary lesions than on their stage. Bacillæmia always constituted an epiphenomenon of limited duration but liable to recurrence. Clinically, bacillæmia declared itself by certain symptoms, such as fever, rapid breathing, and albuminuria. Dr. Jousset laid stress on this last symptom, as the amount of albumin was so small and so transient that it might easily escape detection. With regard to the fever, many modifications were met with. He excluded only one type—namely, the hectic, with great oscillations (1½° to 2° C.), which was caused not by tuberculous, bacillæmia but by infection with pyogenic organisms. The mechanism of the occurrence of bacillæmia remained obscure. The bacilli only occurred in the circulation in small numbers and their virulence was inferior. The study of experimental bacillæmia demonstrated satisfactorily the varieties of micro-organisms that might exist in the body and also showed the manner in which they might disappear (phagolysis, renal elimination, &c.). Dr.

Jousset agreed with Dr. Gary that when tuberculous sputum was swallowed the bacilli were absorbed by the intestine, the integrity of which was intact but its resistance generally lowered.

Dr. RODET and Dr. GALAVIELLE (Montpelier) read a paper on

*The Pathogenic Properties of Certain Acid-fast Bacilli.*

From their investigations they had arrived at the following conclusions. The acid-fast bacillus, generally known as the Timothy bacillus, was certainly endowed with some pathogenic power. The process best adapted to demonstrate its pathogenic properties was the adoption of intravenous injections. The bacillus was capable of producing in the animal tissue certain lesions which presented manifest analogies to those produced by Koch's bacillus. Dr. Rodet and Dr. Galavielle had not been able up to the present to bring about such modifications in the acid-fast bacillus by its passage through the animal organism as to make it approach in its characteristics to those of the bacillus of tuberculosis; this remark applied both to its cultural peculiarities and to its pathogenic power. These observers considered that it would be premature to conclude from their researches that such a transformation was not possible.

Dr. LORAND (Carlsbad) read a paper entitled,

*Thyroid Insufficiency as an Etiological Factor in the Pathogeny of Tuberculosis.*

He said that any causes which affected the proper action of the thyroid gland favoured the development of tuberculosis. Men and animals after the extirpation of the thyroid or when the gland had undergone degenerative processes easily fell victims to any form of infection. Tuberculosis was very frequently seen in those who were suffering from myxœdema (Greenfield) or in their descendants (Pel). The children of tuberculous or syphilitic parents often exhibited congenital atrophy of the thyroid. On the other hand, anything which excited the functions of the thyroid increased the natural immunity to tuberculosis. Thus raw meat, the influence of which upon the thyroid had been previously drawn attention to by Dr. Lorand on the ground of clinical observations and more recently by the experiments of Dr. D. Chalmers Watson, was of considerable value also in the treatment of tuberculosis. The utility of milk could also be explained by its containing the principal elements of the thyroid. The researches of Professor Bang and others were quoted to support this statement. Dr. Lorand had had the opportunity of observing a large number of monkeys which were kept in a circus and he had satisfied himself that those animals which were able to take a meat diet were far less susceptible to tuberculosis than those which lived entirely on a vegetarian diet.

*Report on British Work for the Prevention of Tuberculosis.*

At the final meeting Dr. NATHAN RAW (Liverpool) presented a report on the work of Great Britain. "The movement against tuberculosis in Great Britain has been one of steady progress. The National Association for the Prevention of Consumption is in full swing and in addition to devising and formulating methods of prevention it circulates a large amount of information regarding the disease and the precautions necessary to combat it. Numerous new branches of the association have been established in the larger cities and towns. All these branches are doing excellent work in their own districts. The problem of improving the social conditions of the poor is receiving attention and the different municipalities, of which Liverpool is a pioneer, are providing healthy houses for the working classes and otherwise improving their surroundings. A great deal of attention is directed towards isolating the advanced cases of consumption so as to prevent infection and in the Poor-law infirmaries some thousands of poor consumptives are treated and isolated. This is of the highest importance. Voluntary notification of the disease to the health authorities is in force in almost every town and compulsory notification in Sheffield. During the last few years numerous sanatoriums have been established for the poorer classes. In Liverpool a sanatorium for the poor has been established at Heswall for the treatment of early cases without any payment. Other sanatoriums, chiefly those in connexion with Brompton Hospital, Northwood, Winsley, and Crossley, have been established with satisfactory results. We feel it is of the highest importance that sanatoriums should be provided for the treatment of early cases amongst the poor and that other sanatoriums for the isolation of advanced cases are absolutely necessary to prevent the spread of the disease amongst the poor. Opportunities of scientific research are being established and Sir John Brunner has provided a special tuberculosis research department in the University of Liverpool. We hope soon to establish dispensaries in each large city with a view to assist and advise consumptives in their own homes. The education of the people is spreading and we feel this is of great importance in inducing people to take an interest in the work. By-laws are in force throughout England against spitting in tramcars, carriages, and covered places with excellent effect. The problem of dealing with consumption in London is a colossal one and it is hoped that some central authority may be induced to undertake the work under the direction of the Local Government Board. It is estimated that there are 27,000 persons in London suffering from consumption, a great proportion of cases occurring amongst the poor who are helpless to assist themselves and who are daily spreading the disease to healthy persons with whom they come in contact."

## MEDICAL SCHOOL DINNERS.

*Charing Cross Hospital.*—A dinner of the past and present students of the Charing Cross Hospital and Medical School was held in the Grand Hall, Hotel Cecil, on Oct. 2nd. Dr. W. Cecil Bosanquet presided and 135 past and present students attended. Dr. Bosanquet proposed the toast of "The Hospital and School." He referred to the great loss that the hospital had sustained during the past year in the resignations of Dr. J. Mitchell Bruce and Mr. John H. Morgan, C.V.O., and congratulated the hospital upon the appointment of Mr. P. L. Daniel to the vacancy on the surgical staff. He commented on the action of the committee of the King's Hospital Fund in taking the step it had done in restricting the hospitals in their assistance of the medical schools and pointed to the great difficulty it placed in the way of medical education in London and hoped that that school would continue to maintain its completeness and independence, so necessary to efficient teaching of its students. Mr. Stanley Boyd, in reply, remarked upon the great increase in the strength and vigour of the school during late years and expressed his confidence that it would do better work in the future than it had done in the past. Mr. F. C. Wallis paid a grateful tribute to the work of Mr. Morgan, and on behalf of the past and present students presented him with a silver salver and loving cup, both inscribed with a suitable expression of the students' appreciation of Mr. Morgan's untiring efforts for, and ceaseless interests in, the Charing Cross Hospital Students' Club during his long connexion with it, first as treasurer and then as president. Mr. Morgan, in reply, said that he had only two words to say, short in themselves but difficult in utterance: farewell and thank you. He said farewell as a surgeon but hoped long to be able to do good work for the hospital as treasurer of the school. He retired because he had ever held to the principle that men should give the juniors a chance. Of the inception of the Students' Club he gave the history and said that he was greatly pleased to see the strides which the club had made. He considered that a students' club properly managed and supported was the most potent factor in the promotion of that *esprit de corps* that was so valuable in the building up of the reputation of a hospital. Mr. Morgan thanked the various members of the staff who had been associated with him in the management of the Students' Club and the various secretaries without whose kind help all his endeavours and aspirations would have been valueless. "Gentlemen," he concluded, "from the bottom of my heart I thank you and wish you all farewell." The toast of "The Guests" was proposed by Mr. J. Cantlie in a humorous speech and was responded to by Sir James Crichton-Browne.

*London Hospital.*—Contrary to the ancient custom of holding the annual dinner within the precincts of the hospital, it was held at Prince's Restaurant, Piccadilly, on Oct. 2nd. The expectation of a larger number of diners on this special occasion led to the innovation and events proved the wisdom and foresight of the secretaries, Dr. B. Dawson, and Mr. P. Furnivall. Sir Frederick Treves, Bart., G.C.V.O., as chairman, received the guests and their hosts in the large reception room. Upwards of 260 old "London" men were present. Shortly afterwards an adjournment was made to the large hall of the Institute of Water Colour Painters, where numerous small tables

had been laid out; behind the chairman's seat a large screen had been erected bearing the numerous inter-hospital cups and shields won by the various hospital clubs during the past year. Seated amongst the senior members of the staff at the high table were the Right Hon. Lord Stanley, M.P. (His Majesty's Postmaster-General and treasurer of the hospital), the Hon. Sydney Holland (chairman of the hospital), Mr. Munro Scott (warden of the London Hospital Medical College), and Mr. E. W. Morris (secretary of the hospital). Towards the close of the dinner the chairman in a few but suitable words proposed the toast "The King." This was followed by the toast, "The Queen, the Prince and Princess of Wales, and the other members of the Royal Family." Amidst great applause the chairman read a telegram from Queen Alexandra (the President of the London Hospital), conveying Her Majesty's best wishes on the occasion. In an amusing speech, recalling the old status of the London Hospital Medical College, the chairman proposed the toast of "The London Hospital." He dilated on the unique position of the dean in those days, who intimately combined the multifarious duties of dissecting-room porter, lecturer, adviser, and fee receiver, and on the remarkable power of the half-crown which paid all the college fees. Responses to this toast were made by Lord Stanley as treasurer, the Hon. Sydney Holland as chairman, and Dr. Percy Kidd as chairman of the medical council. Lord Stanley disclaiming any credit due to his office, pointed out that he ought to come second to Mr. Holland who found the money to meet the cheques drawn by the treasurer. Mr. Holland in a humourous and witty speech drew attention to the fact that the hospital had during the past ten years been practically rebuilt at a cost of about £500,000, that numerous large departments had been added, that over 200,000 patients passed through yearly, that now it possessed 937 beds, and that in place of the two old operating theatres there were some 13. Assuming a more serious vein, he announced with sorrow the resignation of Sir Stephen Mackenzie, a retirement enforced by ill-health, and one which was regretted alike by the lay and the medical staffs. Dr. Kidd also spoke feelingly on the loss to the hospital of their senior physician. Then the *pièce de resistance* of the dinner was reached. The event of the evening for which so many old students had gathered together was the presentation of some plate to Mr. Munro Scott, in recognition of his 25 years of service. The presentation took the form of five pieces of antique silver: a centre piece and four candlesticks of eighteenth century work, probably Queen Anne period, of exceedingly beautiful design and workmanship; it was inclosed in an oak cabinet bearing the following inscription:—

To Munro Scott, Esq.—From the Staff, House Committee, and Past and Present Students of the London Hospital Medical College, in recognition of his valued services for 25 years as Warden. Jan. 12th, 1905.

Sir Frederick Treves, in making the presentation, spoke feelingly of the warden's ability and devotion to the College, that when Mr. Scott joined the college in 1880 it was passing through very troublous times, and that these were overcome by the extraordinary ability and business capacity, the great kindness of heart, good sense, and quite remarkable tact of their warden; his previous training as a "handyman" had enabled him to act as navigating lieutenant of the college for 25 years with such good results that Mr. Scott might well be proud of his seamanship; the craft which had been so much to leeward had gradually passed other vessels on the way and was now much to windward—from the hindmost position to the van. For his devotion to the college, his perpetual interest in the welfare of the students and their clubs' union, and as a man for whom no trouble was too much, this present of silver was but a very slight token of his work for 25 years. Amidst great enthusiasm Mr. Scott's health was drunk and in a heartfelt speech he replied, thanking all for their kindness. The toast list concluded with "The Chairman," proposed by Dr. A. J. Rice Oxley.

*St. Mary's Hospital.*—The annual dinner was, as usual, held in the Whitehall Rooms of the Hôtel Métropole on Oct. 2nd, Mr. Herbert W. Page being in the chair in place of Dr. Carey P. Coombs who was prevented from presiding by illness. Amongst those present were Dr. S. P. Phillips, Dr. A. P. Luff, Mr. J. E. Lane, Dr. H. A. Caley, Mr. H. S. Collier, Mr. Henry Harben, L.C.C., the chairman of the hospital board, Dr. H. Franklin Parsons, Dr. Thornton, Dr. Jackson, Mr. Edmund Owen, Mr. A. J. Bisdee, Mr. Morton A. Smale, Dr. E. G. Graham Little, Dr. D. B. Lees, Mr. A. J. Pepper, Dr. R. H. Scanes Spicer, Dr. Alcock, Dr. William Hill, Dr. H. E. Ridewood, Dr. Stevens, Dr. M. Handfield-Jones, Mr. V. W. Low, Dr. Guthrie N. Caley, Dr. J. S. Collier, Dr. J. F. H. Broadbent, Dr. F. J. Poynton, Dr. Wilfred Harris, Mr. W. H. Clayton-Greene, Dr. W. H. Willcox, Mr. H. Davis, Dr. F. S. Dawe, Dr. Langmead, Mr. Ryan, Mr. Matthews, and about 100 others. After the chairman had proposed the Royal toasts in a few words he proceeded to give the toast of the evening, "St. Mary's Hospital and Medical School." He alluded gratefully to the enormous changes that had taken place both in material and in spirit in the hospital and school, instancing the old and new out-patient departments. But the most striking change was the fresh and firm alliance between the two bodies. In the old days the school was rather looked upon as an incumbrance, a necessary evil; now men of position and influence interested themselves in its welfare. In this connexion he first coupled with the toast the name of Mr. Harben, one of St. Mary's benefactors, who had gathered round him similar men to interest themselves in the welfare of the hospital. Another great sign of the present day was the higher intellectual sense that was apparent on all sides; this was especially shown by the universities which were springing up everywhere. He confidently expected that the resuscitation and rejuvenation of the University of London would alter the whole aspect of medical education. He hoped that ere long every student in London would be an undergraduate of its University, the one and only teaching centre. Was St. Mary's fitting herself for this intellectual advance? He thought yes; she now cared for quality more than quantity and in this regard he at once thought of the deanship of Dr. Caley who, though he worked his hardest to bring up the numbers of the school, at heart felt that quality was the important thing. St. Mary's was deeply indebted to his unfailing vigour and interest in both hospital and school; in coupling his name with the toast he alluded in graceful and feeling words to Dr. Caley's recent marriage, wishing him all the happiness he could express.—Mr. Harben then replied for the hospital and Dr. Caley for the school.—Dr. Lees, in a very happy and witty little speech proposed the health of the chairman, to which Mr. Page responded in a like genial manner. This finished the formal part of the meeting which then resolved itself into many groups of old friends.—The following telegram was sent during the evening to Dr. Carey Coombs at Castle Cary, Somerset:—"General regret at your absence and its cause; best wishes for your speedy recovery," from St. Mary's Dinner.

*Middlesex Hospital.*—The annual gathering of past and present students was held in the Empire Hall of the Trocadéro Restaurant on Oct. 2nd, Dr. W. Essex Wynter, physician to the hospital, being in the chair. Dinner was served soon after 7 P.M., 144 sitting down. The chairman proposed the usual loyal toasts and "The Prosperity of the Middlesex Hospital and Medical School with Students Past and Present" was proposed by the President of the Royal College of Physicians of London, Sir Richard Douglas Powell, Bart., K.C.V.O., and responded to by Mr. E. A. Fardon (resident medical officer), Mr. John Murray (Dean), and Mr. H. S. Acton (senior Broderip scholar). The toast of "The Visitors" was proposed by Mr. Andrew Clark and replied to by Chevalier Wilhelm Ganz who, with the assistance of Mr. R. E. Miles, Mr. Richard Green, and Mr. J. A. Bovett, kindly carried out a charming musical programme. The chairman's health was proposed by his colleague and contemporary, Mr. J. Bland-Sutton, and after due acknowledgment the guests adjourned to the adjoining Alexandra Saloon for coffee and conversation and did not finally separate till 11.30 P.M., the arrangements including the last-mentioned feature being greatly appreciated.

*St. Thomas's Hospital.*—The St. Thomas's Hospital Old Student's dinner was held at the Hotel Cecil on Sept. 30th, when Mr. Bernard Pitts presided. There was a good attendance and among those present were Mr. J. G. Wainwright, J.P. (treasurer), Mr. G. Q. Roberts, Mr. B. R. Thorne, Mr. C. T. Harris, Mr. Sydney Phillips, Mr. G. Rendle, Mr. G. Saunders, and Dr. J. Priestley. The toasts of "The King" and "The Queen, Duke and Duchess of Connaught, and the other members of the Royal Family" were proposed by the chairman and received with great enthusiasm. The toast of "St. Thomas's Hospital and Medical School," also proposed by the chairman, was

responded to by the Dean of the Medical School. The toast of "The Chairman" was proposed by Mr. W. F. Haslam.

*University College, London.*—The annual dinner of the old and present students of the Faculty of Medicine of University College was held at the Hotel Cecil, under the presidency of Sir Thomas Barlow, Bart., K.C.V.O. Among the invited guests were Dr. T. Gregory Foster, principal of University College, and Mr. Henry Lucas, chairman of the hospital committee. The toast of the evening, "Success to the Medical School and University College Hospital," was proposed by the chairman. After welcoming the guests Sir Thomas Barlow indicated the lines upon which the incorporation of University College in the University of London would take place and the relations which would in the future exist between the medical school and the hospital. The new buildings for the school in which the advanced medical studies would be conducted had already been commenced. The chairman referred in very sympathetic terms to the loss which their many friends had sustained in the death of Mr. Christopher Heath and Dr. G. Vivian Poore. Dr. J. S. Risien Russell, the dean of the faculty, replied. The chairman's health was proposed by Mr. Henry Lucas, and Sir Thomas Barlow replied. Dr. F. T. Roberts, Dr. W. H. B. Stoddart, and Dr. W. F. Addey contributed to the musical programme. Dr. Roberts, who seemed, if possible, in better voice than ever, had a most enthusiastic reception.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, Oct. 13th, 1827.

THERE is no part of the system of medical education pursued in this country, which more excites the astonishment of foreign professors, who occasionally visit our public institutions, than the practice of what has been not inaptly called *walking* the hospitals. A foreign physician, who had accompanied a surgeon with his suite of pupils through the wards of one of our hospitals, asked, at the end of the perambulation, what was the method of clinical instruction adopted at that institution; a question which reminds us of one that was recently put by the Duchess of Berri, who, after witnessing for the first time a match of cricket played by a party of English gentlemen at Dieppe, inquired with much *naiveté*, when the game was to begin! Whether the surgeon felt embarrassed by the question addressed to him on the occasion to which we allude, we are not prepared to say; he probably felt no embarrassment, for the conscience of men who have so long pocketed the money of their pupils, without giving them an equivalent in instruction, must be tolerably case-hardened. But he well knew, at any rate, that the *farce* which the foreigner had just witnessed, comprehended all of clinical instruction that his pupils ever received; he well knew, not only that his pupils never saw more at the bed side of the patients, than they had been able to see during that perambulation, but that they were expressly prohibited by the "regulations" of the institution, from approaching the patients at any other time. If, therefore, a candid answer had been returned to the inquiry of the foreigner, it must have been to this effect:—"You have already witnessed our scheme of clinical instruction; we *walk* through our parts in a way which may not be very intelligible to continental professors, and while you are expecting to see the curtain rise, our performance has concluded!"[1]

[1] Excerpt from leading article on medical education.

THE Mercers' Company lectures on Recent Advances in the Physiology of Digestion will be given in the Physiological Department of University College, London, by Professor Ernest H. Starling, M.D., F.R.S., during the ensuing term, on Fridays, at 5 P.M., and may be attended without fee by any student in a London medical school or by medical practitioners on presentation of their cards. The first lecture will be given this afternoon (Friday).—A course of eight lectures on Some Experimental Methods employed in the Investigation of Metabolism are being given by Mr. S. B. Schryver, D.Sc., Ph.D., in the Physiological Theatre of the College on Wednesdays at 5 P.M.

# VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7972 births and 4041 deaths were registered during the week ending Oct. 7th. The annual rate of mortality in these towns, which had been 14·3, 13·8, and 14·0 per 1000 in the three preceding weeks, declined again to 13·5 per 1000 last week. In London the death-rate was 13·2 per 1000, while it averaged 13·6 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 3·7 in King's Norton, 4·3 in Hornsey, 5·5 in Hastings, 7·3 in Southampton, 7·5 in Wallasey, 7·6 in York, 8·4 in Grimsby, and 8·5 in Croydon; while the highest rates were 17·8 in Wolverhampton, 17·9 in Swansea, 18·0 in Blackburn, 18·6 in Newport (Mon.), 18·7 in Bury, 20·5 in Wigan and in Sunderland, 21·9 in Merthyr Tydfil, and 26·3 in Tynemouth. The 4041 deaths in these towns last week included 446 which were referred to the principal infectious diseases, against 820, 655, and 588 in the three preceding weeks; of these 446 deaths, 241 resulted from diarrhœa, 52 from diphtheria, 49 from scarlet fever, 40 from whooping-cough, 37 from measles, and 27 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Northampton, Ipswich, Hanley, Handsworth (Staffs.), Stockport, Barrow-in-Furness, Rotherham, York, Stockton-on-Tees, or Cardiff; the highest death-rates from the principal infectious diseases were recorded in Walthamstow, Wolverhampton, Smethwick, Bootle, Bury, Salford, Blackburn, Sunderland, and Merthyr-Tydfil. The greatest proportional mortality from measles occurred in Blackburn, Gateshead, and Swansea; from scarlet fever in Bootle and Blackburn; from diphtheria in South Shields; from whooping-cough in West Hartlepool; and from diarrhœa in West Ham, Wolverhampton, Walsall, Smethwick, Bury, Burnley, and Sunderland. The mortality from "fever" showed no marked excess in any of the large towns. No death from small-pox was registered last week in any of the 76 towns and no cases of this disease were under treatment during the week in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Oct. 7th, was 3789, against 3150, 3424, and 3591 on the three preceding Saturdays; 527 new cases were admitted during the week, against 469, 546, and 509 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 113, 130, and 155 in the three preceding weeks, declined last week to 152 and were 14 below the number in the corresponding period of last year. The causes of 51, or 1·3 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Nottingham, Salford, Leeds, and in 47 other smaller towns; the highest proportions of uncertified deaths were registered in Handsworth (Staffs.), Leicester, Liverpool, Bootle, Manchester, Blackburn, Sunderland, South Shields, Tynemouth, and Cardiff.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·0, 13·5, and 14·5 per 1000 in the three preceding weeks, further rose to 14·9 per 1000 during the week ending Oct. 7th, and was 1·4 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·1 in Paisley and 10·2 in Leith to 17·5 in Dundee and 18·1 in Aberdeen. The 499 deaths in these towns last week included 37 which were referred to diarrhœa, seven to measles, five to "fever," four to whooping-cough, three to diphtheria, and two to scarlet fever. In all 58 deaths resulted from these principal infectious diseases last week, against 71, 59, and 56 in the three preceding weeks. These 58 deaths were equal to an annual rate of 1·7 per 1000, which was 0·2 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 32, 38, and 36 in the three preceding weeks, rose again last week to 37, of which 18

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING SEPTEMBER, 1905.

*(Specially compiled for* THE LANCET.)

| Cities and Boroughs. | Estimated population in the middle of 1905. | Notified Cases of Infectious Disease. | | | | | | | | | | | Deaths from Principal Infectious Diseases. | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living. | Deaths of Infants under one year to 1000 births. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cholera. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | | |
| LONDON ... ... ... ... ... ... ... | 4,684,794 | — | 2129 | 512 | 1 | 212 | 1 | 23 | 435 | — | 3363 | 9·4 | — | 49 | 38 | 38 | 64 | — | 33 | — | 548 | 770 | 2·1 | 4886 | 13·6 | 147 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington ... ... ... ... ... ... | 147,935 | — | 26 | 11 | — | 6 | — | — | 15 | — | 58 | 5·1 | — | 1 | 2 | 1 | 5 | — | 1 | — | 14 | 24 | 2·1 | 111 | 9·8 | 117 |
| Kensington ... ... ... ... ... ... | 180,083 | — | 32 | 8 | — | 2 | — | — | 19 | — | 61 | 4·4 | — | 5 | 2 | — | — | — | 1 | — | 9 | 17 | 1·2 | 144 | 10·4 | 123 |
| Hammersmith ... ... ... ... ... | 119,037 | — | 20 | 24 | — | 1 | — | 1 | 10 | — | 56 | 6·1 | — | 2 | 2 | 2 | 2 | — | — | — | 12 | 20 | 2·2 | 113 | 12·4 | 164 |
| Fulham ... ... ... ... ... ... ... | 157,210 | — | 86 | 22 | — | 2 | — | 1 | 11 | — | 122 | 10·1 | — | 2 | — | 1 | 2 | — | 1 | — | 35 | 41 | 3·4 | 148 | 12·3 | 159 |
| Chelsea ... ... ... ... ... ... ... | 74,496 | — | 25 | 4 | — | 1 | — | — | 8 | — | 38 | 6·6 | — | — | — | 2 | 1 | — | 1 | — | 4 | 8 | 1·4 | 78 | 13·6 | 89 |
| City of Westminster ... ... ... ... | 175,606 | — | 38 | 8 | — | 7 | — | 1 | 17 | — | 71 | 5·3 | — | 2 | 3 | — | 1 | — | — | — | 8 | 14 | 1·0 | 163 | 12·1 | 78 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone ... ... ... ... ... | 129,453 | — | 38 | 16 | — | 7 | — | — | 17 | — | 78 | 7·9 | — | — | — | — | 1 | — | 1 | — | 8 | 10 | 1·0 | 125 | 12·6 | 95 |
| Hampstead ... ... ... ... ... ... | 88,142 | — | 2 | 2 | — | 2 | — | — | 2 | — | 8 | 1·2 | — | — | — | — | — | — | — | — | 1 | 1 | 0·1 | 55 | 8·1 | 83 |
| St. Pancras ... ... ... ... ... ... | 236,183 | — | 182 | 11 | — | 8 | — | 2 | 17 | — | 220 | 12·1 | — | 2 | 1 | 3 | 1 | — | 2 | — | 19 | 28 | 1·5 | 251 | 13·9 | 144 |
| Islington ... ... ... ... ... ... ... | 342,994 | — | 143 | 33 | — | 18 | — | 2 | 32 | — | 228 | 8·7 | — | 6 | 2 | 2 | 6 | — | 1 | — | 36 | 53 | 2·0 | 358 | 13·6 | 149 |
| Stoke Newington ... ... ... ... ... | 62,828 | — | 9 | 6 | — | 2 | — | — | 5 | — | 22 | 5·4 | — | — | — | — | — | — | — | — | 6 | 6 | 1·5 | 35 | 8·6 | 93 |
| Hackney ... ... ... ... ... ... ... | 228,479 | — | 105 | 21 | — | 22 | — | 1 | 25 | — | 174 | 9·9 | — | — | 1 | 1 | 1 | — | 4 | — | 31 | 38 | 2·2 | 213 | 12·2 | 150 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn ... ... ... ... ... ... ... | 56,481 | — | 19 | 3 | — | 2 | 1 | 1 | 4 | — | 30 | 6·9 | — | — | — | | 2 | — | — | — | 1 | 4 | 0·9 | 65 | 15·0 | 74 |
| Finsbury ... ... ... ... ... ... ... | 98,207 | — | 76 | 14 | — | 14 | — | — | 15 | — | 119 | 15·8 | — | — | — | — | 2 | — | 3 | — | 8 | 13 | 1·7 | 110 | 14·6 | 112 |
| City of London ... ... ... ... ... | 22,425 | — | 12 | 2 | — | 1 | — | — | 1 | — | 16 | 9·3 | — | — | — | 1 | — | — | — | — | — | 1 | 0·6 | 23 | 13·4 | 50 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch ... ... ... ... ... ... | 116,565 | — | 126 | 23 | — | 8 | — | — | 11 | — | 168 | 18·8 | — | 1 | 1 | 1 | 4 | — | 1 | — | 13 | 21 | 2·3 | 145 | 16·2 | 154 |
| Bethnal Green ... ... ... ... ... | 130,401 | — | 80 | 26 | — | 8 | — | — | 20 | — | 134 | 13·4 | — | 1 | — | 2 | 1 | — | 3 | — | 21 | 28 | 2·8 | 171 | 17·1 | 139 |
| Stepney ... ... ... ... ... ... ... | 305,466 | — | 239 | 43 | 1 | 8 | — | — | 79 | — | 390 | 16·6 | — | 3 | 7 | 3 | 13 | — | 1 | — | 55 | 82 | 3·5 | 396 | 16·9 | 172 |
| Poplar ... ... ... ... ... ... ... | 170,280 | — | 141 | 39 | — | 16 | — | 2 | 15 | — | 213 | 16·3 | — | 2 | 3 | 3 | 6 | — | 3 | — | 28 | 45 | 3·4 | 216 | 16·5 | 157 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark ... ... ... ... ... ... | 208,528 | — | 92 | 24 | — | 15 | — | 1 | 35 | — | 167 | 10·4 | — | 7 | 3 | 4 | 1 | — | 1 | — | 32 | 48 | 3·0 | 273 | 17·1 | 192 |
| Bermondsey ... ... ... ... ... ... | 129,006 | — | 87 | 14 | — | 6 | — | 1 | 18 | — | 126 | 12·7 | — | 2 | 1 | 2 | — | — | 2 | — | 25 | 32 | 3·2 | 179 | 18·1 | 163 |
| Lambeth ... ... ... ... ... ... ... | 313,045 | — | 81 | 53 | — | 13 | — | — | 25 | — | 172 | 7·2 | — | 3 | 3 | 4 | 4 | — | 4 | — | 38 | 56 | 2·3 | 380 | 15·8 | 165 |
| Battersea ... ... ... ... ... ... | 177,532 | — | 75 | 11 | — | 3 | — | 3 | 19 | — | 111 | 8·2 | — | 2 | 2 | — | 3 | — | — | — | 30 | 37 | 2·7 | 182 | 13·4 | 171 |
| Wandsworth ... ... ... ... ... ... | 266,392 | — | 124 | 29 | — | 11 | — | — | 16 | — | 180 | 8·8 | — | 5 | — | 1 | 3 | — | — | — | 21 | 30 | 1·5 | 220 | 10·8 | 150 |
| Camberwell ... ... ... ... ... ... | 271,240 | — | 103 | 22 | — | 6 | — | 2 | 23 | — | 156 | 7·5 | — | 1 | 2 | — | 1 | — | 2 | — | 28 | 34 | 1·6 | 222 | 10·7 | 152 |
| Deptford ... ... ... ... ... ... ... | 114,495 | — | 66 | 7 | — | 4 | — | 2 | 11 | — | 90 | 10·2 | — | — | 1 | 2 | — | — | — | — | 18 | 21 | 2·4 | 131 | 14·9 | 189 |
| Greenwich ... ... ... ... ... ... | 103,493 | — | 15 | 17 | — | 5 | — | 1 | 6 | — | 44 | 5·5 | — | 1 | — | 1 | — | — | 1 | — | 15 | 18 | 2·3 | 116 | 14·6 | 173 |
| Lewisham ... ... ... ... ... ... | 144,420 | — | 35 | 3 | — | 5 | — | 1 | 4 | — | 48 | 4·3 | — | — | — | 1 | 3 | — | — | — | 18 | 22 | 2·0 | 140 | 12·6 | 142 |
| Woolwich ... ... ... ... ... ... | 125,372 | — | 32 | 16 | — | 3 | — | 1 | 5 | — | 57 | 5·9 | — | 1 | 2 | — | 1 | — | — | — | 14 | 18 | 1·9 | 123 | 12·8 | 113 |
| Port of London ... ... ... ... ... | — | — | — | — | — | 6 | — | — | — | — | 6 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup.

occurred in Glasgow, seven in Edinburgh, five in Dundee, and five in Aberdeen. The deaths from measles, which had been three, two, and seven in the three preceding weeks, were again seven last week and were all registered in Glasgow. The fatal cases of "fever," which had been ten, five, and one in the three preceding weeks, rose again last week to five, of which two were registered in Paisley. The deaths from whooping-cough, which had been ten, eight, and four in the three preceding weeks, were again four last week, and included two in Glasgow. The fatal cases of diphtheria, which had been 11, three, and six in the three preceding weeks, declined again last week to three, of which two occurred in Edinburgh. The deaths from scarlet fever, which had been five, three, and two in the three preceding weeks, were again two last week, and were both registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 63, 58, and 77 in the three preceding weeks, declined again last week to 65, and were eight below the number in the corresponding period of last year. The causes of 17, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

## HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 16·2, 17·9, and 22·3 per 1000 in the three preceding weeks, declined again to 19·8 per 1000 during the week ending Oct. 7th. During the past four weeks the death-rate averaged 19·1 per 1000, the rate during the same period being 13·4 in London and 13·8 in Edinburgh. The 144 deaths of persons belonging to Dublin registered during the week under notice were 18 below the number in the preceding week, and included three which were referred to the principal infectious diseases, against 12, 13, and 12 in the three preceding weeks; of these, two resulted from "fever" and one from diarrhœa, but not any from small-pox, measles, scarlet fever, diphtheria, or whooping-cough. These three deaths were equal to an annual rate of 0·4 per 1000, the death-rates during the same period from the principal infectious diseases being 1·3 in London and 1·5 in Edinburgh. The deaths from "fever," which had been one, two, and three in the three preceding weeks, declined again to two last week. One fatal case of diarrhœa was recorded last week, against, 10, 10, and nine in the three preceding weeks. The 144 deaths in Dublin last week included 29 of children under one year of age and 38 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were slightly below the respective numbers in the preceding week. Five inquest cases and two deaths from violence were registered; and 60, or more than two-fifths, of the deaths occurred in public institutions. The causes of five, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

## VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1905.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 9·4 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In each of the three preceding months the rate had been 6·8 per 1000. The lowest rates last month were recorded in Paddington, Kensington, the City of Westminster, Hampstead, Stoke Newington, Greenwich, and Lewisham; and the highest rates in St. Pancras, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. No cases of small-pox were notified last month and no small-pox patients were under treatment during the month in the Metropolitan Asylums hospitals. The prevalence of scarlet fever showed a very marked increase during September, as compared with other recent months; among the various metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Finsbury, Shoreditch, Stepney, Poplar, and Bermondsey. The Metropolitan Asylums hospitals contained 3567 scarlet fever patients at the end of last month, against 2444, 2527, and 2850 at the end of the three preceding months; the weekly admissions averaged 487, against 301, 338, and 368 in the three preceding months. Diphtheria was more prevalent last month than it had been in either of the two preceding months; among the various metropolitan boroughs this disease showed the greatest proportional prevalence in Hammersmith, Shoreditch, Bethnal Green, Poplar, Lambeth, and Greenwich. The number of diphtheria patients in the Metropolitan Asylums hospitals, which had been 715, 785, and 665 at the end of the three preceding months, had risen again to 730 at the end of last month; the weekly admissions averaged 114, against 111, 118, and 83 in the three preceding months. The prevalence of enteric fever was considerably in excess of that recorded in any preceding month of this year; this disease was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Bethnal Green, Poplar, and Southwark. There were 143 enteric fever patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 78, 94, and 121 at the end of the three preceding months; the weekly admissions averaged 24, against 10, 17, and 20 in the three preceding months. Erysipelas was proportionally most prevalent in St. Marylebone, Finsbury, Bethnal Green, Stepney, Southwark, and Bermondsey. The 23 cases of puerperal fever notified during the month included three in Battersea and two each in St. Pancras, Islington, Poplar, Camberwell, and Deptford.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Sept. 30th, 4886 deaths belonging to London were registered, equal to an annual rate of 13·6 per 1000; in the three preceding months the rates had been 12·1, 11·9, and 16·2 per 1000. The death-rates last month ranged from 8·1 in Hampstead, 8·6 in Stoke Newington, 9·8 in Paddington, 10·4 in Kensington, 10·7 in Camberwell, and 10·8 in Wandsworth, to 16·2 in Shoreditch, 16·5 in Poplar, 16·9 in Stepney, 17·1 in Bethnal Green and in Southwark, and 18·1 in Bermondsey. The 4886 deaths from all causes in London last month included 770 which were referred to the principal infectious diseases; of these, 49 resulted from measles, 38 from scarlet fever, 36 from diphtheria, 64 from whooping-cough, 33 from enteric fever, and 548 from diarrhœa. The lowest death-rates from these diseases were recorded in the City of Westminster, St. Marylebone, Hampstead, Holborn, and the City of London; and the highest rates in Fulham, Stepney, Poplar, Southwark, and Bermondsey. The 49 deaths from measles were 17 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Kensington, Hammersmith, Islington, Southwark, and Wandsworth. The 38 fatal cases of scarlet fever showed a decline of five from the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Hammersmith, the City of Westminster, Stepney, Poplar, and Woolwich. The deaths from diphtheria numbered 36 last month, against a corrected average of 123 in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Hammersmith, Chelsea, Poplar, Southwark, Bermondsey, and Deptford. The 64 fatal cases of whooping-cough were 35 below the corrected average number; among the various metropolitan boroughs the highest death-rates from this disease were recorded in Paddington, Holborn, Shoreditch, Stepney, and Poplar. The 33 deaths from enteric fever were 30 fewer than the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Hackney, Finsbury, Bethnal Green, Poplar, and Bermondsey. The 548 fatal cases of diarrhœa were 164 below the corrected average; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Fulham, Bethnal Green, Stepney, Poplar, Bermondsey, Battersea, and Deptford. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 30 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 147 per 1000. The lowest rates of infant mortality were recorded in Chelsea, City of Westminster, Hampstead, Holborn, and the City of London; and the highest rates in Stepney, Southwark, Battersea, Deptford, and Greenwich.

## THE MEETING OF THE BRITISH MEDICAL ASSOCIATION IN TORONTO.

AT a meeting of the medical profession of Toronto a nominating committee was elected to name a Representative Arrangements Committee for the coming meeting of the British Medical Association. Great enthusiasm was shown and an effort will be made to make the Toronto meeting one of the best in the history of the Association. It was thought well that the meeting should begin on August 21st in order that members might have no difficulty in arranging for accommodation, for the National Exposition begins the week after and not only are hotels and boarding houses crowded at that time but private houses as well. After the meeting of the profession the Toronto branch met and Dr. R. A. Reeve was recommended for President. This was a popular choice, for throughout Canada he is most highly respected. Dr. Reeve is Dean of the Faculty of Medicine in the University of Toronto, President of the Alumni Association, and Professor of Ophthalmology and Otology.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon J. Lloyd Thomas, Principal Medical Officer, of H.M.S. *Excellent*, has been appointed to H.M.S. *Victory* for special service. The special service is his appointment as representative of the Medical Department of the Admiralty at a congress of military surgeons of the United States, at Detroit, U.S.A.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon William Spry has been placed on the Retired List at his own request (dated Oct. 2nd, 1905).

### ROYAL ARMY MEDICAL CORPS.

Captain H. V. Prynne and Major E. Eckersley have left Woolwich. Captain E. T. Inkson, V.C., joins at Woolwich. Major R. Holyoake is held in readiness for service in India.

### ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant George Thomson, Nottinghamshire (Sherwood Rangers) Imperial Yeomanry, to be Surgeon-Captain (dated Oct. 7th, 1905); Surgeon-Lieutenant James C. Herbertson, 2nd Volunteer Battalion, Argyll and Sutherland Highlanders, to be Surgeon-Lieutenant (dated Oct. 7th, 1905); Surgeon-Lieutenant Henry G. Smeeth, 4th Volunteer Battalion the Cheshire Regiment, to be Surgeon-Lieutenant (dated Oct. 11th, 1905).

### ROYAL ARMY MEDICAL CORPS (MILITIA).

*Aldershot Command:* No. 2 Aldershot Company: Lieutenant (Honorary Lieutenant in the Army) J. C. Furness to be Captain (dated June 17th, 1905).

### VOLUNTEER CORPS.

*Royal Garrison Artillery (Volunteers):* 2nd Kent: George Gray Wilson to be Surgeon-Lieutenant (dated Sept. 7th, 1905). 1st Lancashire: Surgeon-Captain F. F. German resigns his commission (dated Oct. 4th, 1905). 3rd Middlesex: Surgeon-Lieutenant-Colonel (Surgeon-Lieutenant-Colonel, Army Medical Reserve of Officers) A. Lingard is granted the honorary rank of Surgeon-Colonel (dated Sept. 18th, 1905); Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel (Surgeon-Lieutenant-Colonel, Army Medical Reserve of Officers) A. Lingard resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Sept. 18th, 1905).

*Royal Engineers (Volunteers):* 1st Bedfordshire William James Spence to be Surgeon-Lieutenant (dated Oct. 4th, 1905).

*Rifle:* 1st Roxburgh and Selkirk (The Border) Volunteer Rifle Corps: Supernumerary Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel G. H. Turnbull (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Scottish Border Volunteer Infantry Brigade), resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Oct. 4th, 1905). 2nd Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment: The undermentioned Surgeon-Captains are granted the honorary rank of Surgeon-Major:—H. Allan (dated Oct. 4th, 1905) and J. H. Maclean (dated Oct. 4th, 1905).

### THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on Oct 10th, Sir J. N. Dick, K.C.B., being in the chair, the sum of £55 was distributed among the several applicants.

### ROYAL ARMY MEDICAL CORPS, LONDON COMPANIES (VOLUNTEERS).

The London Companies of the Royal Army Medical Corps (Volunteers) will attend Divine service at the Church of St. Bartholomew-the-Great, West Smithfield, on Sunday, Oct. 22nd, at 11 A.M. The sermon will be preached by the Rev. Sir Borradaile Savory, Bart., M.A., Rector of the Church and Acting Chaplain, R.A.M.C.(V.).

# Correspondence.

"Audi alteram partem."

## MOTOR APHASIA WITHOUT AGRAPHIA.

*To the Editors of* THE LANCET.

SIRS,—The case of motor aphasia without agraphia recorded by Dr. Byrom Bramwell in THE LANCET of Oct. 7th, p. 1027, is remarkable and interesting from several points of view. No example of such complete loss of speech, with such complete retention of the power of writing, has, so far as my knowledge goes, been published. I have seen cases in which writing has been recovered before speech and in which there has been a curious correspondence between defective speech and writing, the writing being, on the whole, more expressive of the ideas to be conveyed, so that I had ceased to hold the opinion that "intellectual expression" in writing was secondary to speech or vocal "intellectual expression" and implied the coöperation of the speech centre.

A noteworthy point in Dr. Bramwell's case is that articulation appears to have been impaired. When seen 16 months after the attack "she still spoke thickly and had the greatest difficulty with labials." While in the hospital a fortnight after her admission and recovering from the absolute speechlessness she could repeat well certain letters, the open vowels and certain consonants, but others imperfectly; others, again, not at all. Now, in ordinary motor aphasia the few words which the patient retains—"Yes," "No," interjectional exclamations—are, or at any rate may be, uttered quite distinctly. The defect is not articular. On the other hand, he cannot repeat words when they are pronounced before him and he is told to do so. In one case which I have reported the patient answered "Yes" and "No" appropriately to questions, but when told to say "No" he tried in vain for some time and then shook his head negatively and said, "No, I can't."

The difference here indicated between the speech affection of Dr. Bramwell's patient and ordinary motor aphasia shows in my opinion that the lesion was subcortical and probably at some depth from the cortex. Speech, or utterance in the sense of intellectual expression, and articulation are two distinct things. The cortical centre for speech or intellectual expression employs for utterance the centre in which articulation is organised, which is in a lower level altogether.

It may be remarked, again, that some facial paresis was still noticeable three and a half years after the attack, having been very marked at first. But we may have almost complete and very persistent aphasia without any facial paralysis at all, when the lesion is cortical. We have here, then, further evidence that the lesion was remote from the cortex.

I should have been very glad if the lesion could have been regarded as affecting the cortex of Broca's convolution or of the closely subjacent white conducting fibres, as it would have been strongly confirmatory of the interpretation I have advanced of the mechanism of speech and thought. This is that in certain convolutions of the posterior part of the hemisphere, receiving no radiating fibres from the internal capsule or any lower centre, but only from other convolutions, there is a sensory centre upon which converge fibres from the various perceptive centres, visual, tactile,

auditory, &c., and in which all the perceptions relating to external objects are combined into an image or idea, with which is associated the name. It is the *naming* or *idea* centre. There is in the pre-frontal convolutions a corresponding motor centre which sends down no fibres to the central ganglia or bulb, but is connected by collateral fibres with convolutions from which the internal capsule receives descending fibres. This I call the *propositionising centre*. In it names or ideas from the naming centre are arranged into propositions or sentences which are passed on to Broca's convolution or the graphic centre respectively for expression in speech or writing.

There are other points in this remarkable case which invite comment but they are not of the same importance.

I am, Sirs, yours faithfully,

Oct. 10th, 1905. W. H. BROADBENT.

## THE MEDICAL REGISTER.

*To the Editors of* THE LANCET.

SIRS,—I should be much obliged if in the interests of the profession you would be good enough to draw the attention of all registered practitioners to the importance of keeping their addresses correct in the Medical Register. It ought to be clearly borne in mind that Churchill's Medical Directory is a private publication and is not the same work as the official Medical Register for which the General Medical Council is responsible. Changes of address should be notified at the office of the branch council at which a practitioner originally registered. The English Branch Council has this year sent circulars to all practitioners from P to Z, both inclusive, who originally registered at its office, and any person who has not received a circular or who has not yet sent in his answer should communicate with this office without delay.—I am, Sirs, yours faithfully,

H. E. ALLEN,

299, Oxford-street, London, W., Oct. 5th, 1905. Registrar.

## THE PYGMIES IN ANCIENT EGYPT.

*To the Editors of* THE LANCET.

SIRS,—The articles of Dr. G. Elliot Smith and Dr. A. Churchward both contain information which is highly interesting for Egyptologists. I have often advocated the idea that in our researches we look too much towards the Semitic world in Asia and that we should find explanations of difficulties in the religion, the customs, and even the language of the old Egyptians if we studied more carefully the African populations which were their neighbours.

As for dwarfs or pygmies I cannot agree with the opinion of my eminent friend, M. Maspero, on this point. I believe the Egyptian texts mention two different kinds. One is the real dwarf, the deformed being whom rich people like to have in their houses for amusement, and chiefly for dancing. Their misshapen bodies seem to me the prototypes of the god Bes and also of a form of Phtah, as has been conclusively shown by Dr. Parrot (Recueil II., p. 129). But in other cases I think that the Egyptians really meant pygmies. For instance, the Danga of the kings of the Sixth Dynasty must be pygmies. Dwarfs are not rare in Egypt and if the Danga had been only small and distorted bodies I see no reason why their arrival in Egypt should have been an event, why the kings should have valued them so much, and why an officer should have recorded in his biography that he brought with him one of those beings if they were not of rare occurrence. The Danga must have belonged to an African tribe which had especial propensity to dancing, like other full-sized African populations. In the temples at Dier-el-bahari and at Luxor we see dancing executed by the Tamahu, a well-known African nation. They occur in various exercises for the occasion, they wear ostrich feathers, and they are called "the dancers of the royal boat."

If the case of the Danga is still doubtful I can quote two instances in which it seems to be certain that the inscriptions mean pygmies. In the sculptures which describe a great festival in the temple at Bubastis we see a procession of priests, among whom are three small men marching along and holding long canes. They have a title which Brugsch translates "guards," "beadles," something connected with the police of the temple. These guards are neither children nor dwarfs; they are well proportioned and are certainly pygmies. They are probably not Egyptians, for we find in the same ceremony another African population, the Anu or Anti of Nubia, coming from the south. A third extraordinary figure is a man having a face like Bes but a well-proportioned body. The inscription which is above the figure cannot be understood; it ends with *nanasu nanu*, which may be this man's language.[1] Another instance where we find the pygmies mentioned is in a nome or district inscription from the temple at Philæ of the time of Ptolemy IV. It begins with the nome of Nubia, where we find the words: "I give my bow to His Majesty that he may subdue the Anti ..... the dwarfs of the countries of the south bring their tributes to his palace." Now it is clear that here we must translate pygmies and not dwarfs. Dwarfs could not pay tribute, it must be a settled population. Here, again, as at Bubastis, they are quoted with the Anti and are said to come from the south where we expect to find the pygmies.

I might add to these two instances the population called the *Pit* which Brugsch considers as the Πύγμαι of Herodotus, and his identification seems probable, but it requires further proofs, as this name, which means the springer, or the leaper, may be only an epithet describing their dancing abilities.

I am, Sirs, yours faithfully,

Oct. 2nd, 1905. EDOUARD NAVILLE, D.C.L., LL.D.

## CHORISTER'S HEART.

*To the Editors of* THE LANCET.

SIRS,—At present, when there is an inquiry into the causes of national physical deterioration, it is opportune to mention one to which little or no attention has been directed. This, perhaps minor as regards the numbers which it affects, is sufficiently important to merit consideration. The cause referred to is singing, as taught to, and practised by, boys and young adults in church choirs. This statement at first sight may appear to be erroneous, as it is generally accepted that voice production and choral practice are beneficial and tend toward a better development of the individual. After ten years' careful observation I am convinced that disciplinary singing, commenced in early boyhood or girlhood, is the causation of enlargement of the heart as a whole and more especially of its right side. This is accompanied by a proneness to palpitation and even dilatation upon comparatively slight mental or physical exertion. Pain occurs, which may be referred to the left breast, shoulder, back, or waist; depression and anxiety are concomitants. That these are conditions common to overstrain in athletes is well known, but an athlete is less liable to such derangements than is the young growing boy. In the former the various organic systems have acquired a degree of stability; in the latter they are plastic, sensitive, and ready to adopt impressions.

Turning from the general to the special features, take for illustration a boy of eight or nine years of age who has been engaged in choir singing for from six to 12 months. The relations complain that he is not sleeping well, that he feels always tired, that his alertness is gone, and that he does not care to run about. The boy looks pale, puffy under the eyes, and has an anxious facial expression; the shoulders are sloping; the left side of the body inclines forward; the general attitude denotes unrest. On examination one observes that the veins of the upper extremities and neck stand out and are fuller than normal; the thorax has a one-sided, rachitic appearance, owing to the prominence of the præcordia. Pulsation is visible in the fourth and fifth left interspaces, in the sixth right, in the epigastric area to the left of the xiphisternum, and occasionally in the second left intercostal space. These phenomena at eight years of age are obviously abnormal, while, on auscultation, the heart sounds denote its enlargement. At 13 years, in a boy naturally robust who has been a chorister for three or four years, the veins of the arm and neck are enlarged, the general development is poor, the left-sided appearance of the chest is more marked, while a sulcus, similar to Turnbull's "rachitic" and corresponding to the costal attachment of the diaphragm, sometimes is present. The muscularity of the lower limbs is deficient owing probably to the disinclination for active exercise. The cardiac impact is now most visible in the fifth and sixth left interspaces and in the epigastrium, while the heart sounds are as audible over the surface of the right ventricle as upon the apex of the left. Although the voice "breaks" and singing becomes impossible the changes already set up do not subside, for at 16 years of age the enlargement of the heart persists and the

[1] Naville: Festival Hall of Bubastis, Plates XV. and XX.

veins are too full. This is especially so towards evening, although the youth be engaged in an office or warehouse where the duties are light. The left thorax is still prominent and any exertion beyond walking and light physical drill produces exaggerated heart's action and as a consequence any occupation requiring heavy bodily efforts is avoided. This does not tend to improve the individual's physique. At 18 or 19 years the young man comes to ascertain if there be anything "seriously amiss," as he has been refused admission to a volunteer corps owing to the examining medical officer remarking that the heart was too large and he "could not stand the marching." The general configuration at 25 years is quite distinctive and although later at the meridian the natural tendency to gaining in bulk renders the bodily shape less marked, the venous and other circulatory conditions remain the same.

These are not descriptions of a few individuals but are observations made upon a number of cases, in none of which could the changes be ascribed to rheumatism, syphilis, or physical strain apart from choral singing. If one reviews briefly what is required of a choir boy, changes in the heart and its innervation can scarcely fail to take place. The requirements of a church are two or even three practices a week, three-quarters of an hour in duration, in others one practice of one and a half hours, with two Sunday services. In a cathedral school the boys have one service each weekday and two on Sundays, as well as practices. The last mentioned consist of singing and voice production. Of this latter the essentials are a deep inspiration without elevation of the shoulders and having the abdominal muscles tense and an expiration which is graduated at intervals according to the requirements of the musical phrase, the whole line of a chant being produced from one respiration, and even a verse of a minute's duration is sometimes called for. The usual normal respirations, 16 per minute, are reduced to six, five, three, two, or even one. There is, therefore, in singing a severe effort which is considerably felt by the beginner but becomes less marked on continuation of the practices; the physical effects continue, however.

Physiological experiments upon rabbits prove that in deep inspiration a twelfth of the total volume of blood in the body is contained in the lungs. This doubtless applies to man when the pulmonary vessels become congested antecedent to the diastolic filling of the heart, but it is not merely a filling, it is an overfilling, of both sides, because in singing the tension of the muscles of the abdomen drives the blood from the abdominal viscera towards the right auricle while the increased aortic resistance diminishes the systolic output of the left ventricle with a consequent rise of intracardiac pressure. The heart, therefore, instead of acting as a pump becomes during the course of the singing practice a reservoir for blood, except during short intervals of rest between the pieces. This reservoir function causes the heart to dilate and as a sequence hypertrophy follows. This latter state is further brought about by excessive filling of the coronary vessels, whence the musculature obtains its nutrition. Again, the stimulation of the endocardium by overfilling with blood increases the number of the heart's beats; the quality of the blood is probably also impaired because during its prolonged contact with the walls of the heart it is deprived disproportionately of the salts which are essential to cardiac muscle movements. The heart is therefore nourished at the expense of general muscular, osseous, and nervous tissues. The venous engorgement of the neck, the thorax, and of the upper extremities, already referred to, suggests overfilling of the cerebral veins and deficient arterial supply to the brain. During the execution of singing, and especially in solos, there is a considerable nervous effort as well as a physical one to secure complete coördination of the necessary muscles. All these conditions tend towards enlargement and irritability of the heart, which when once established are more or less permanent during life, as *pari passu* the heart increases in size with the growth of the body. What is most helpful is the cessation of singing and all exercises except walking and gentle right arm movements, with careful administration of arsenic for a period of from four to six weeks; the latter by its power to decrease arterial pressure and to absorb oxygen from the blood, thereby tending towards fatty formation in muscle fibre, diminishes the cardiac force, irritability, and pain.

I am, Sirs, yours faithfully,

G. W. F. MACNAUGHTON, M.D. Edin., M.R.C.P. Lond.

Lower Belgrave-street, S.W., Oct. 2nd, 1905.

## SANATORIUMS AND THE ERADICATION OF CONSUMPTION.

*To the Editors of* THE LANCET.

SIRS,—It is safe to affirm that all who are interested in the great question of consumption and its cure and prevention must have read the extremely able article in THE LANCET of Sept. 30th, p. 958, by Dr. R. Campbell Macfie, with the greatest possible avidity. I need make no apology for adding a few remarks confirming him in his views in almost every instance, though perhaps somewhat doubtful of the extent of benefit which he anticipates from his suggested colonies for partly "cured" consumptives. It may be well to state at once that I myself was smitten down with consumption seven years ago. I had all the classical symptoms—namely, hectic temperature, night sweats, extreme loss of weight and appetite, weakness, cough and expectoration, hæmoptysis, &c. Moreover, the expectoration contained tubercle bacilli. I devoted practically a year to the difficult matter of recovery, after which I became medical superintendent at the county sanatorium in Westmorland. After staying there over a year I left for my present appointment of medical superintendent of the Liverpool Sanatorium for Consumption. Between these two periods I visited Nordrach in the Black Forest where I stayed as a patient for two months, my idea being to learn all I could before taking up a somewhat onerous post. It will thus be understood that my experience of seven years—first as patient and then as sanatorium physician—must give my opinions a practical value that theorists and collectors of statistics cannot possess. Dr. Macfie has given his opinions after extensive experience and has supported them with thoroughness by recent statistics and quotations from other authorities; accordingly I will content myself with the results of my own personal observations.

All sanatoriums, in my opinion, are being more or less wasted on account of the large percentage of quite unsuitable cases. Even in the Liverpool Sanatorium where I myself have to examine all applicants before admission it is impossible to find anything like enough early cases to fill the beds (40 in number). This seems incredible when one considers the populous area from which we draw patients—namely, Liverpool and the district for 20 miles all round. Most of my patients, though selected as the best that offer themselves, have had symptoms of consumption for 18 months and over and the lesions in the lungs are in the majority of cases well defined, extending to two and three lobes and more. These cases often surprise one by the improvement which occurs but, alas, speedy relapse is too often the sequel. Early cases, with the disease *confined to one lobe* in *one lung* or at most to *slight disease in two lobes*, as a rule, recover and, what is much more important, remain well in large numbers. Until sanatoriums can fill their beds with such cases there must be enormous waste of money to the public who are asked to support such institutions.

*Why do not early cases apply in larger numbers?* There are many reasons. 1. People of the working classes shun the doctor. They struggle on and on until the disease has widely spread. 2. When patients do consult a doctor, the consultation too often results in a "tonic" with *no examination*. Too many doctors are lacking in thoroughness, or perhaps they are too busy to give each patient enough time. And in this respect "club doctors" are not alone to blame. 3. When the doctor does make an examination the disease in early stages is too often missed.

*Why do sanatoriums admit unsuitable cases?* 1. Early and suitable cases being lacking, one feels bound to admit other cases—one can patch them up and educate them on the danger of infection, &c. 2. Empty beds mean loss of income to the institution, even if the fees of the patients do not cover their cost. 3. For reasons of "sentiment." Every sanatorium has its committee or board of management and subscribers. Cases come to the notice of these individuals and they would not be human if their feelings did not master their judgment. Medical officers of public sanatoriums often have to admit cases recommended by influential men for no other reason than that of mistaken kindness.

*Why do so many apparently arrested cases relapse a year or two after leaving the sanatorium?* 1. Many of these cases have had extensive lesions; the moist sounds may have dried up and the disease apparently cleared, but small foci of disease in my opinion have remained. The strain of earning

one's living, the poorer food, the lack of pure air, the bustle and worry of life all conduce to the disease once more getting the mastery. 2. Early cases that might do permanently well too often leave the sanatorium after three months' treatment. I myself gave up a year to recovering and then only undertook light work, sacrificing prospects that had been very bright. I am quite convinced that otherwise a relapse would have occurred in my case also. During my first year's work after the illness, symptoms of malaise and loss of appetite would frequently occur. At these times I would resolutely eat full meals and rest in the open air almost entirely and would thus stave off the enemy. In ordinary life, with most of the working classes, this is impossible; such patients expect to recover completely in three or four months and to remain well under most unfavourable conditions. 3. Consumption—after it has reached a stage which is *recognisable* by definite physical signs—is *very rarely cured*. Until better methods of treatment are discovered the most one can expect by sanatorium treatment (the best treatment at present known) is to build up the vitality of the patient with food, fresh air, and careful individual treatment. The disease thus is *lessened in activity*. If the vitality can be maintained the patient remains well but the disease is usually present though latent and awaiting its opportunity. I impress these views on all my patients. The truth, though disconcerting, makes them careful.

Now having briefly explained my own opinions on the above important points I will pass on to Dr. Macfie's article. He plainly states that sanatoriums can never be a great factor in *eradicating* consumption. He thinks they are of some use and that with a more careful selection of cases the use of sanatoriums would be doubled. I am so far in complete accordance. But until medical men as a class *systematically* look for consumption among their patients there will never be early cases enough to fill our present sanatoriums. Let all medical men carefully and systematically search for consumption in the following cases and they will often discover it much earlier than they may think. I refer to cases between 16 and 40 years of age who—(1) have "debility"; (2) have cough; (3) complain of fatigue; (4) complain of dyspepsia; (5) are pale; (6) have had *pleurisy* (the majority of my patients have a history of pleurisy a few years previously); and (7) recover slowly after child-birth or any illness, such as influenza, &c.

But even supposing we could fill our sanatoriums with early cases we cannot *cure* them, in my opinion. We can arrest the disease and the longer the disease remains arrested the more chance there is of permanent arrest. Colonies such as Dr. Macfie suggests *might* be of great use but I am afraid that in the majority of instances early cases feeling well at the end of a few months at the sanatorium would refuse to stay a year or so at such colonies and these would then soon be filled with chronic cases of consumption. Dr. Macfie's example in support of his plea for such colonies is useless. Children are not wage earners; moreover, children can be controlled and kept at such colonies. Men and women feeling well would refuse to stay at a colony and run the risk of losing their situations from which probably they have only had three or at most six months' leave. Even when all their fees are paid by friends I often have difficulty in persuading such cases to stay more than three months. I therefore feel that colonies for consumptives will not be of much practical help and am of opinion that to get the greatest good out of sanatoriums, efforts should be made to get medical men to search for and to send early cases; and that these early cases should be enabled if possible to stay six months at a sanatorium. Sanatoriums will then be far more useful and less wasteful than under existing conditions. But they can *never* be of great use to the public—they will help individuals, but *as a factor towards the eradication of consumption*, they are, and will be, failures.

We are "breeding" consumption too fast in our towns and insanitary dwelling houses to have any right to expect sanatoriums or any methods of treatment to prevail. Consumption *must* be prevented. By various sanitary improvements consumption is being gradually lessened but if there could only be a scientific and comprehensive attack on all the conditions predisposing to the disease what strides would be made! To sum up, sanatoriums with increased facilities for strict selection of suitable cases will be very useful institutions. At present they are too costly through so many beds being wasted in trying to treat hopeless cases. Colonies such as Dr. Macfie suggests may help but will be liable to the very same abuses which at present ruin the usefulness of sanatoriums. Better than anything, prevention must be our aim.—I am, Sirs, yours faithfully,

W. B. HERAPATH WOOD, M.B. Lond.,
Medical Superintendent of the Liverpool Sanatorium.

Kingswood, Frodsham, Oct. 3rd, 1905.

## WEBSTER MEMORIAL HOSPITAL.

*To the Editors of* THE LANCET.

SIRS,—In an article on the "Alverstone Memorial Hospital" in THE LANCET of Sept. 30th, p. 989, you state that the management of the hospital will rest in the hands of myself and my partner. Let me say that the management of the hospital is in the hands of a committee elected by the annual subscribers and further that the four medical men practising in Shanklin have been elected by the committee as an honorary medical staff to the hospital.

I am, Sirs, yours faithfully,

Shanklin, Isle of Wight, Oct. 7th, 1905. J. COWPER.

## CONGENITAL MULTIPLE OCCLUSIONS OF THE SMALL INTESTINE.

*To the Editors of* THE LANCET.

SIRS,—In the interesting article on Congenital Multiple Occlusions of the Small Intestine published in THE LANCET of August 12th, p. 440, Dr. J. G. Emanuel states that he believes the case to be unique and has been unable to find the records of any similar case. I would draw his attention to a case operated upon by myself and published in the St. Thomas's Hospital Reports, vol. xxvi., new series for the year 1897. The report runs as follows: "Multiple congenital strictures of small intestine. E. H. P., male, æt. 3 days. Symptoms of obstruction since birth. Anus well formed. Rectum explored after removal of coccyx; no abnormality found. Abdomen opened in left iliac region, enormous coil of small gut presented. Stricture found and enterostomy performed just above stricture. Death from exhaustion the following day. P.M. Small gut for 12 inches below duodenum much distended and thickened. Five or six constrictions in remainder of small gut, each about one inch in length and impervious, as tested by forcing on bowel contents. The constricted parts of thickness of thin twine. Colon and rectum pervious, size of goose quill." Unfortunately I have no further notes of the case but to the best of my recollection there were no distended areas of small gut, except above the first stricture, as in Dr. Emanuel's case, but the contents of the gut were normal meconium. I am, Sirs, yours faithfully,

E. OWEN THURSTON, F.R.C.S. Eng.,
Calcutta, Sept. 21st, 1905. Captain, I.M.S.

## THE CULTIVATION OF THE BACILLUS LEPRÆ.

*To the Editors of* THE LANCET.

SIRS,—I noticed in THE LANCET of August 26th, p. 636, some notes on the supposed cure for leprosy put forward by Captain E. R. Rost, I.M.S. When Captain Rost's papers first appeared, although I could not follow the reasons which led him to attempt to cultivate the bacillus lepræ in media free from sodium chloride, I wrote to India to procure 500 doses of the antisubstance because I did not wish to leave any remedy untried. At the same time I prepared media in strict accordance with Captain Rost's instructions and also with modifications. I obtained from the base of a leprotic nodule in a living subject a few minims of lymph full of the bacillus lepræ in pure culture. I inoculated many tubes of the different media and kept them for weeks in the incubator but they all remained sterile. Therefore, I was not surprised to receive a letter from India stating that as it had been demonstrated that the organism cultivated by Captain Rost was not the bacillus lepræ the manufacture of the remedy had been stopped. I gather from your notice that those who inquired into Captain Rost's method delivered themselves of some rather severe criticisms. This is a pity. Captain Rost is by no means the first man who has made a mistake with regard to the cultivation of the bacillus lepræ, and probably he will not be the last. No doubt his failure is a great disappointment to him; it certainly is to me. It is

not generous, and in my opinion shows a want of professional good feeling, to increase his trouble by useless censures.

I am, Sirs, yours faithfully,

GEORGE TURNER,
Medical Officer of Health, Transvaal; and Medical Superintendent of the Pretoria Leper Asylum.

Pretoria, Sept. 18th, 1905.

## VARICOCELE—WHAT OF IT?

*To the Editors of* THE LANCET.

SIRS,—It is earnestly to be hoped that the able letters of Colonel F. Howard, Mr. Harrison Cripps, and Mr. Edred M. Corner on the subject of varicocele may have the effect of compelling the authorities to take a more just and sensible view of the question of varicocele as it affects the recruit. It is one in which I personally have long been interested, since for several years I experienced the discomfort of varicocele as a soldier, and am now, like many others in the medical profession, frequently called upon to operate for this condition in order to satisfy the requirements of the services, a large number of recruits coming constantly under the care of my colleagues and myself in the wards of the *Dreadnought* Hospital. I may therefore lay claim to have viewed the question from both of its aspects—viz., the military and the medical. During the period of my service in a horse regiment, a matter of four years, I suffered from an unusually large varicocele which appeared at the age of 15 years. The intermittent aching and sense of dragging in the loin and groin which the condition caused me were as severe (so far as I have been able to satisfy myself) as is usual in the worst cases. During the whole of the period in question I was actively employed in my profession both on mounted and dismounted duty, to say nothing of long days of hunting, polo, &c., and that without the use of any suspender. On no occasion was I off duty on account of my condition; therefore, if any organic change actually takes place in the testis as the result of persistent varicocele, such change should undoubtedly be present in my own person; yet such is not the case; fibrosis is entirely absent and no varicocele has been present for over ten years. Looking back on the period of my service I can recall no single instance of any man in my regiment being reported unfit for duty on account of varicocele. My own case is only one of several within my recollection.

Considering the question from the surgical standpoint, I am (it is true with a very much more limited experience) entirely of Mr. Harrison Cripps's opinion, that the evils of varicocele have been grossly exaggerated. Although I have seen and examined a very large number of these cases and of cases in which the condition was once present, I have never seen one in which I could satisfy myself that any serious degeneration of the testis had taken place, and certainly none in which atrophy was present. If this opinion is shared, as I believe it to be by the majority of surgeons, I fail to see why any complaint of inability to perform duty on this account should be taken seriously in any of the services. If discomfort and aching are honestly complained of an efficient suspender will meet the case; if after the application of such the complaints persist the *bona fides* of the patient who seeks exemption from his duty on this account must be open to suspicion. That so many young recruits should be compelled to submit to an operation so unnecessary and often so unjustifiable is a matter calling for the serious consideration of the profession. As matters stand at present it is useless to refuse operation; such would condemn a willing recruit to disappointment and the public service to the loss of a good servant. The hidebound rule in respect to varicocele, defective teeth, and similar minutiæ has become a fetich of the worst type, alike dishonest to the public, which it annually robs of thousands of good soldiers and sailors in years already lean to the recruiting officer, and degrading to the medical profession which is largely responsible for its continued existence.

I feel sure that if the matter were made, as it certainly should be, the subject of investigation by the Royal College of Surgeons of England, the services would be the gainers by the loss of a miserable rule of thumb and the richer by many thousands of willing servants. Men who are ready to undergo operation for *large* varicoceles for the privilege of entering the army or the navy are little likely to prove malingerers, while those who have *small* ones do not require operation, and in them malingering cannot be seriously considered. Personal experience has shown me that case after case is sent for operation which is of so trivial a nature as not even to require the application of a suspender. That such a flagrant abuse of surgery has been allowed to exist so long unchallenged speaks volumes for our professional apathy.

I am, Sirs, yours faithfully,

Mansfield-street, W., Oct. 5th, 1905. LAWRIE MCGAVIN.

*To the Editors of* THE LANCET.

SIRS,—May I through your columns call attention to a point which has not hitherto been touched upon in the correspondence *re* the operation for varicocele—I mean the probable excision of the nervous supply of the testicle together with the spermatic veins. I have it, on the authority of an eminent anatomist, that the nerve-supply of the gland runs in close continuity with the spermatic artery, which itself usually lies just behind the anterior group of spermatic veins. I think I am right in saying that in a large number of the operations performed for the relief of varicocele no attempt is made to dissect the spermatic artery away from the veins, the structure to which most care is directed being, very properly, the vas deferens. Along this latter structure run the artery to the vas and a few filaments from the hypogastric nervous plexus, these filaments having practically no influence on the nutrition of the testicle itself. I would therefore venture to raise the question as to whether the excision of the nerve-supply of the gland is not frequently the cause of those fibrotic and atrophic changes which are, as has been previously stated in your columns, so often met with after the operation. There is, as far as I know, no other gland in the body the nerve-supply of which can be cut away without its undergoing some physiological change of an atrophic nature, and I should be glad to know the opinions of others on this which seems to me to be a most important point in the technique of the operation for varicocele.

I am, Sirs, yours faithfully,

C. A. S. RIDOUT, M.S. Lond., F.R.C.S. Eng.
Royal Portsmouth Hospital, Oct. 10th, 1905.

*To the Editors of* THE LANCET.

SIRS,—I have just returned from a lengthened stay abroad and the correspondence under the above heading which has appeared in THE LANCET, beginning with Colonel F. Howard's letter of Sept. 23rd, has been brought to my notice. May I trespass briefly on your valuable space to say that I served 32 years in the army and for ten years was divisional staff surgeon in important districts and during that time I never once saw an officer incapacitated for duty from varicocele. I feel quite certain that the practice of operating in these cases is altogether unjustifiable. It must be remembered that the operation is performed at the age when the sexual function is springing into activity in youths whose vascular systems are relaxed from the sedentary habits which hard study involves. The disastrous consequences in many cases of this operation are notorious and need not be dwelt upon. In my opinion greater latitude should be given to medical boards and their discretion should not be so fettered. Slight varicocele should not disqualify. In any case medical boards should cease recommending the operation as essential for the acceptance of candidates. A youth is either fit or unfit and with these recommendations medical boards should cease to have anything to do; they are *ultra vires*. As to varicocele in the private soldier, that is another matter; it is no doubt a valuable asset to a soldier who wishes to shirk a hard day's work.

I am, Sirs, yours faithfully,

WILLIAM HILL CLIMO, M.D. R.U.I.,
Lieutenant-Colonel, Army Medical Staff (retired).

Earl's Court, S.W., Oct. 9th, 1905.

## CHRONIC PARALYSIS OF THE INTERCOSTAL MUSCLES AS A PRIMARY CAUSE OF DROPSY.

*To the Editors of* THE LANCET.

SIRS,—The case published by Dr. Goldwin W. Howland in THE LANCET of Oct. 7th, p. 1035, under the above title is of considerable interest as showing the important part which the respiratory muscles take in maintaining the normal circulation. The patient is a lad, aged 17 years, who, as the

result of damage to the lower cervical cord, has been compelled for the last four years to rely upon the diaphragm alone for carrying on the movements of respiration, and this respiratory paralysis has so far interfered with the circulation that within the last few months dropsy, first in the legs and then more generally, has made its appearance, an event which Dr. Howland attributes to venous obstruction consequent upon "diminished expansion in the upper lobes of both lungs," adding that it may partly also be due to "a diminution in the negative intrathoracic pressure."

Dr. Howland apparently assumes that the paralysis of rib breathing has led to deficient expansion in the upper part of the lungs only. Are we not, however, safe in postulating a general shrinkage of the lungs in this case? for when the costal elevators are paralysed all the ribs, and not the upper ones only, tend, especially if the subject be young, to drop, thus causing a flattening of the thorax sagittally throughout its entire length. It has further to be remembered that, owing to the free mobility of the lungs within the chest, diaphragmatic breathing tends to cause them to expand equally in all their parts. I should therefore expect to find in this patient a generalised pulmonary shrinkage. Such shrinkage, whether we assume it to be partial or general, augments, as Dr. Howland observes, the resistance in the pulmonary circuit, this resistance being in inverse ratio to the degree of pulmonary expansion—i.e., it is greatest in full expiration and least in full inspiration. While admitting, however, that in the patient under discussion the augmented pulmonary resistance tends to obstruct the venous circulation, I am doubtful whether it has played any large part in the production of the dropsy. For this I should regard the second factor to which Dr. Howland refers as chiefly responsible.

With the pulmonary shrinkage resulting from the paralysis of the costal elevators the stretched pulmonary tissue relaxes and there occurs a fall—probably to the point of extinction—in the suction which the lungs normally exercise on the interior of the thoracic walls and on the mediastinal contents, including that very important organ the heart. The stretched condition of the lungs which results in "negative intrathoracic pressure," or, as we may more briefly term it, "pulmonary suction," depends, in fact, upon the proper action of the inspiratory muscles. I have elsewhere argued that the essential purport of this pulmonary suction is to aid the diastole of the heart, notably of the auricles, and the right one in particular, and in this way to promote the flow of blood into the heart; and if such is the case it follows that the inspiratory muscles play a highly important part in aiding the circulation. These muscles are, I submit, from the beginning to the end of life ever on the watch to maintain suction action on the heart so that this organ shall *always work in a partial vacuum*. Directly they fail in this the heart must work at a great disadvantage, and when, as has apparently happened in Dr. Howland's patient, pulmonary suction is permanently done away with grave disturbance of the circulation is bound to follow.

So far as I am able to judge the view that the respiratory movements of the lungs aid the circulation of the blood rests on no solid foundation. These movements do, however, promote the flow of lymph in the pulmonary lymphatics owing to the fact that these vessels are provided with valves. Hence deficient movement of the lungs favours the stagnation of the pulmonary lymph flow, and this may have predisposed to dropsy in the patient in question.

The great disadvantage under which the diaphragm acts in this case may constitute another factor in the production of the disturbed circulation; for while the rhythmic movements of the lungs do not aid the flow of blood, the rhythmic descent of the diaphragm, by compressing the intra-abdominal veins, normally promotes the return of blood along the inferior cava; but in order that the diaphragm may effectively perform this function, it must not only be able to contract vigorously (to which end other respiratory muscles must simultaneously contract) but must be duly opposed by firmly contracted abdominal muscles so as to insure the necessary increment in intra-abdominal pressure; and neither of these requirements obtains in Dr. Howland's patient.

In conclusion, I would urge that the influence on the circulation of respiratory paralysis deserves closer study than it has yet received. In children suffering from idiopathic muscle palsy the respiratory muscles are generally sooner or later paralysed, the lungs shrinking in consequence; and in all cases of this kind which I have had the opportunity of studying the heart has been manifestly embarrassed—a circumstance which I have been in the habit of attributing, rightly or wrongly, to diminution, if not actual extinction, of pulmonary suction. Cases like Dr. Howland's, in which the spinal cord is blocked just below the origin of the phrenic nerves, are also of great interest in this connexion. His case, from its unusual duration and the ultimate supervention of dropsy, deserves, I would suggest, to be recorded in detail, more especially in regard to the cyrtometric tracings at different levels of the chest and the exact condition of the individual respiratory muscles. On the strength of the author's assertion that "respiration has during the last four years been carried on entirely by the diaphragm," I have assumed all of these muscles, with the exception of the last, to be paralysed. On the other hand, he attributes the occurrence of the dropsy to "chronic paralysis of the intercostal muscles," which rather leads one to question whether he regards all the respiratory muscles other than the diaphragm as being completely paralysed. It seems, indeed, hardly possible for respiration to be carried on for a number of years under such adverse conditions. I am, Sirs, yours faithfully,

Wimpole-street, W., Oct. 8th, 1905. HARRY CAMPBELL.

## NEXT YEAR'S ELECTION OF DIRECT REPRESENTATIVES TO THE GENERAL MEDICAL COUNCIL.

*To the Editors of* THE LANCET.

SIRS,—The *British Medical Journal* of Saturday last states that the medical secretary of the British Medical Association has sent a communication to the honorary secretaries of the various divisions of the Association in England and Wales, calling upon them to make arrangements for the selection of two candidates to be supported by the Association at next year's election of Direct Representatives to the General Medical Council. Under the scheme of the Association each suppliant for the support of the Association will be called upon to sign a "declaration" to the effect that if not selected by the Association for nomination, he will not allow himself "to be nominated as a candidate in opposition to any candidate so selected." Further, he has to agree, if elected, to do as he is bid *by the bodies constitutionally authorised* to instruct him on behalf of the Association! In no circumstances could I sign such a declaration and therefore my name will not be submitted to the divisions of the British Medical Association as a candidate. It is, however, my intention when the proper time arrives again to solicit the support of my brother practitioners as an independent candidate. Trusting to your courtesy to publish this announcement and thanking you in anticipation,

I am, Sirs, yours faithfully,

GEORGE BROWN,
A Direct Representative for England and Wales on the General Medical Council.

Callington, Cornwall, Oct. 11th, 1905.

## THE RADICAL CURE OF HERNIA.

*To the Editors of* THE LANCET.

SIRS,—My attention has just been called to the number of cases of radical cure of hernia mentioned in a paper of mine which appeared in THE LANCET of August 26th, 1905, p. 594. In that paper, owing to a misprint, the number of inguinal cases is given as 6; comparison with the total number will, of course, show that this should be 76, the first figure having been omitted. May I ask you to correct this in your next issue.—I am, Sirs, yours faithfully,

Manchester, Oct. 11th, 1905. E. STANMORE BISHOP.

## THE PRESENT STATE OF MEDICAL PRACTICE IN THE RHONDDA VALLEY.

*To the Editors of* THE LANCET.

SIRS,—I have read with interest the article in THE LANCET of Oct. 7th, p. 1065, entitled "The Present State of Medical Practice in the Rhondda Valley" and I wish to say that I thoroughly endorse the statements and opinions contained

therein, but I would like to call your attention to the fact that this condition of affairs prevails not only in the Rhondda Valley but throughout nearly the whole of the South Wales colliery district, to the great detriment of the general health of the community and also to the *amour propre* of the medical profession, as it is productive of a considerable amount of cliquism.

Let me give you a bit of my experience. I am a medical man in private practice in a colliery district and my *clientèle* consists of farmers and tradespeople and a fair sprinkling of the colliers themselves, who are not satisfied with their own medical man; and here comes in the hardship: if the colliery medical man becomes cognisant that they have been to an outside man they refuse to attend this patient any longer, although they still take his money. As regards the question of cliquism I would like to say that in any difficult or doubtful case requiring help or a second opinion the medical men make it a point of calling into consultation a brother practitioner who is also connected with a colliery, even if they have to send out of the district for him, and only in a few instances where the patient's friends insist upon it will they meet a private practitioner.

The fault lies in the system and not with the men or the colliery medical officers; the men ought to be able to pay to any medical man residing in the district; they ought to have the option of calling in consultation any other medical man they wish, and they ought to have the option of changing their medical man if they are not satisfied. I do not mean that they should be able to change at any time but they ought to be able to elect every three or six months which medical man they will pay to. As regards the colliery medical officers themselves I have nothing to say against them; I think, without exception, they are well qualified, capable men, but under the present system they have a great deal more work than they can properly attend to and so a very great deal of it is left to assistants and not properly supervised; there are many medical officers employing three or four assistants.

There is one other complaint made by the men in my district and I believe it applies to all—that after the medical man gets his appointment his conduct and treatment of the men are left in the hands of a "doctor's committee," and so long as the medical officer can keep in with this committee it is useless for the men to complain.

I am, Sirs, yours faithfully,

Oct. 10th, 1905. PRIVATE PRACTITIONER.

---

*To the Editors of* THE LANCET.

SIRS,—I was reading your correspondent's communication respecting medical practice in the Rhondda Valley and quite agree with his remarks. I myself think the dignity of the profession is fearfully lowered by letting these miners become the masters of the situation. One method that could be adopted would be for all the wholesale druggists absolutely to refuse to supply drugs to working men's committees; but another, and I think more necessary, action would be for the General Medical Council to take the matter up and frame a law by which any medical man accepting a post under any of these schemes or committees should be liable to erasure. Then they would be unable to obtain medical assistance and this would then be a means of ending them. I know of a scheme now that has been started in opposition to the poundage system and the amount they receive in subscriptions is 1*s.* 3*d.* per month for members over 18 years of age and 8*d.* per month under 18 years if working. In the older cases this monthly payment of 1*s.* 3*d.* includes father, mother, and perhaps five or six children. Previous to this many who have joined this scheme under the poundage system were paying their medical man 3*s.* 6*d.* or 4*s.* 6*d.* per month. The consequence of this lowering of the payment in this way does not enable them to pay their medical man an adequate salary, especially as the committee want to make something for themselves out of it, and that can only be done by sweating the medical man. As your correspondent says, they can always get medical men to do their work. I quite agree in that, but if one inquires minutely into that it will be generally found, I am sorry to say, that Irishmen are the ones who apply for and obtain these vacancies. One other hardship that obtains in either appointment, whether poundage or scheme, is having to attend the midwifery without a fee. I think from this it will be seen that it is time the General Medical Council moved in the matter.

I am, Sirs, yours faithfully,

Oct. 9th, 1905. MEDICUS.

## A POSSIBLE CAUSE OF INTEMPERANCE.

*To the Editors of* THE LANCET.

SIRS,—Men are said on high authority to drink alcoholic drinks for one of three reasons—that they may satisfy thirst, please the taste, or produce the exhilaration which in time becomes intoxication. But there is a possible fourth reason which Dr. Archdall Reid has not noticed. Men—whole nations—may drink to still the qualms of an outraged digestion. In the Middle Ages alcohol was much valued as a medicine and later it came to be regarded as a digestive. Thus at the famous dinner party described by Dean Swift, Tom Never-out and his friends drank a dram of brandy after partaking freely of pasty, hare, rabbit, pigeons, partridges, a ham, and a goose. A diner on that occasion remarked of the brandy that it was "very good for the wholesomes." It was regarded as a digestive and the glass of cognac drunk as a liqueur at the end of a meal still witnesses to the belief. Alcohol is, in fact, held to be a medicine for repletion as well as a sedative to digestions exasperated by bad cookery. Whole nations are the victims of this last. With certain of the Celts, indeed, it seems to be a point of honour to prepare food villainously or insufficiently. The wild Irish, as described by the Elizabethan Camden, were often too pressed by hunger to cook their meat at all. "When they are sharp set," he says, "they make no bones of raw flesh, after they have squeez'd the blood out; to digest which they drink *Usquebaugh*." Ireland is a very conservative country, retentive alike of bad and good habits, and in the west of it to-day in any but first-rate hotels the visitor is often almost fain to do as did the wild Irish of old. A diet of extra tough mutton served anyhow and cooked (underdone) the very day it has been killed promotes a craving after dinner for long and strong potations. It is to be noted that an Irish "whisky" is just double as large as an English one and that an Irish whisky-and-soda often contains a whole wineglassful of spirit. "Ponch" is mainly composed of mulled whisky. The consumption per head of strong drink is exceptionally large in Ireland and the most prosperous commercial concerns in the distressful country are the breweries and distilleries. Why all this drinking? The Celt is not gross and sottish by nature, and a rainy climate when nobody minds it does not lead men to drink. No; the inference surely is that the Irish Celt has to make up somehow for the misery often unconsciously suffered that results, in the west at any rate, from tough food, the total absence of fruit, lack of variety in vegetable diet, and a certain ascetic or merely well-bred desire to stomach anything without cavil or comment. The French, on the other hand, are Celts strongly Latinised. The average Frenchman is prone to make a religious ceremony of his dinner. He is voted a gourmand but it must be admitted that the French and the Latins generally (the cooking, wine-drinking nations *par excellence*) are temperate. Their vices may be thick upon them but they are not great tipplers and do not die from cirrhotic livers. Is it too much to infer that good cookery is a main cause of national temperance and that the drunken nations, the tippling classes, the intemperate individuals are the badly nourished—the sufferers from a careless *cuisine*?

I am, Sirs, yours faithfully,

Oct. 11th, 1905. P. V.

---

DINNER TO SIR THOMAS CHAVASSE.—On Oct. 5th, at the Grand Hotel, Birmingham, a complimentary dinner was given to Sir Thomas Chavasse, senior surgeon to the General Hospital, on the occasion of the recent honour of knighthood conferred upon him by the King. A large gathering of medical men of the town and district, numbering 157, was present, who testified their approval of the choice by cordial enthusiasm. The chair was taken by Dr. E. Rickards and the toast of the guest of the evening was proposed by him in graceful and appropriate terms. Mr. Jordan Lloyd and Dr. T. E. Underhill also supported the testimony given to Sir Thomas Chavasse's high professional standing and social attributes. Sir Thomas Chavasse, in responding, expressed his pleasure in meeting so many of his old friends, together with his grateful recognition of the honour done to him on the occasion. The proceedings were marked by much cordiality. Due praise was also accorded to Mr. George Heaton and Dr. T. Nelson for their successful efforts in the arrangements for the meeting.

## MEASURES FOR PREVENTION OF INFECTIOUS DISEASES IN THE UNITED STATES.

(FROM A CORRESPONDENT.)

AT the present time the United States is without any general health organisation representing the national Government which can in any manner be compared with those of the countries of Europe—for example, the Local Government Board of England. There are, however, general and local boards of health. The operations of local boards of health in the management and control of infectious diseases are enforced by the aid of laws or ordinances and rules and the different methods employed are, first, notification; second, isolation; and, third, disinfection. To these may be added, for the purpose of securing immunity from certain diseases, the provision of vaccination as a protection against the dangers of small-pox and of certain antitoxins for securing immunity against other diseases, notably against diphtheria. Till within the last 20 years notification was scarcely recognised in the United States except in the single instance of small-pox. It is now quite generally the custom throughout all the more densely settled States, and especially in the cities and large towns, to require notification of small-pox, diphtheria (including membranous croup), scarlet fever, and typhoid fever. To these may be added in a more limited degree measles, cerebro-spinal meningitis, yellow fever, leprosy, Asiatic cholera, whooping-cough, and German measles. Notwithstanding the general recognition of the infectious character of tuberculosis, the propriety of requiring its notification in common with other infectious diseases, and on similar terms, does not appear to have become generally acknowledged in the United States and the only large city in which such notification is compulsory is New York, where by the following order of the board of health of the city such notice is called for; Section 225 of the Sanitary Code, adopted Jan. 19th, 1897, classes pulmonary tuberculosis as "an infectious and communicable disease." Under the provisions of this section physicians are required to report to the health department the name, address, age, sex, and occupation of every case of pulmonary tuberculosis coming under their professional care. The information thus received is solely for registration and cases so reported are not visited by the inspectors of this department, nor are they interfered with in any way except upon the request of the attending physician. The residences of all cases of tuberculosis reported to this department by public institutions are visited by medical inspectors who there give information with regard to the nature of the disease and the precautions necessary to prevent the infection of others. When residences occupied by consumptives are vacated through the death or removal of the patient the inspectors recommend the renovation required to free them from infection. The orders for such renovation are enforced by the board of health.

The practice of requiring the separation from the community at large of persons suffering from small-pox has been recognised for many years but it has not been till the past 20 years that the laws of the United States have definitely provided for the separation of those who are affected with other infectious diseases. Except in the case of small-pox it is commonly the custom to permit the wage-earners of the family to continue their occupations, under proper restrictions as to disinfection, bathing, and change of clothing. The practice of providing special hospitals for the treatment of persons suffering from infectious diseases has not become so widespread in the United States as it has in Great Britain. Pest houses and small-pox hospitals have, however, existed from quite an early period but on account of the extremely irregular occurrence of small-pox and of the need of keeping them closed much of the time their equipment has usually been of a primitive character. It is only within the last 10 or 15 years that cities have begun to recognise the need of special provision for this class of diseases.

The methods employed for disinfection after the occurrence of infectious diseases in the United States have been very much the same as those in use in the different countries of Europe, specially since the very important investigations of Professor Koch upon the value of the different substances used for disinfection were made public. Apparatus for steam disinfection has been introduced in the largest cities for the disinfection of moveable material and similar apparatus is in use in connexion with many public institutions, isolation hospitals, and also at the different quarantine stations at seaports. Within the past seven years or so the use of formaldehyde by means of various forms of apparatus has very largely superseded the use of sulphurous acid for the disinfection of closed apartments. Laws relating to vaccination were first enacted during the first decade of the nineteenth century and have been followed by various amendments and limitations from that time till the present. One of the most efficient laws relating to this subject is that which exists in many of the States requiring that unvaccinated children shall not be admitted to the public schools. While there are compulsory laws in some States it cannot be said that such laws are thoroughly enforced to the extent of securing the vaccination of the entire population over two years of age, as is done, for example, throughout the German empire. The vaccinated portion of the inhabitants of the United States may be estimated at not far from 90 per cent. of the whole and the revaccinated portion at probably 50 per cent. The production of vaccine lymph, as well as that of antitoxins, in the United States is unfortunately in the hands of private persons, but the tendency in the past 15 years has been in the direction of improvement and antiseptic methods have been introduced, together with new appliances intended to secure the production of a pure and trustworthy lymph. Glycerinated lymph is largely taking the place of the older forms and humanised lymph is now but little used.

The maintenance of an efficient quarantine is relatively of more importance in the United States, as compared with other countries, in proportion to the preponderance of the factor of immigration. The necessity also of maintaining such quarantine more stringently at the present day than was required in earlier years is due to a decided change in the quality of the immigration. The quarantine and inspection stations, which are conducted by national, State, or local authorities, are 120 in number, of which 81 are on the Atlantic coast, 22 are on the Gulf of Mexico, and 17 are on the Pacific Coast. By far the most important station as a quarantine port is that of New York, since the arrivals of vessels at that station from foreign ports may be counted annually by thousands. The equipment of this station consists of a boarding station, a sufficient anchorage ground for incoming vessels, two large and powerful steam-tugs for boarding facilities, apparatus and steamer for disinfection of vessels and for bathing immigrants and disinfecting their personal effects, a detention and disinfection station on Hoffman Island, an artificial island of eight acres having hospital buildings for the accommodation of 200 patients, a morgue and crematory, and all necessary appliances for hospital treatment of quarantinable diseases.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Death of Lieutenant-Colonel MacSwiney, A.M.S. (retired).*

Lieutenant-Colonel Eugene Valentine MacSwiney met his death on Oct. 3rd in sad circumstances. He had been visiting a relative in London and had booked from Euston by the midnight express to Birkenhead. When near Coventry he was seen by a fellow traveller to fall out of the train, the door being then open but the window closed; the gentleman alluded to tried to catch hold of the deceased's coat but failed. He had no idea as to how the deceased came to fall out of the train. Another passenger, a lady, stated at the inquest that she was partly asleep on the journey and hearing a noise she looked around and saw the deceased falling from the carriage. During the journey the deceased had appeared restless and several times opened and looked out of the carriage window. A carriage inspector, named Morris, said that on receipt of a telephone message from Birmingham he went with an assistant on an engine to look for the deceased and found his body lying clear of the main line about four miles from Birmingham. He was then quite dead and was taken to Stechford Station. The medical evidence was to the effect that there were extensive scalp wounds. The skull was fractured and one collar bone was broken. His legs were uninjured and it would appear that he had fallen head foremost. The coroner, in summing up, remarked that the deceased was

accustomed to long-distance travelling and although there was no evidence adduced it was quite possible that he thought that a lavatory was attached to the carriage and opened the door to get at it. There is a strong probability of this being so, as one of his sons stated at the inquest that his father was suffering from an attack of diarrhœa at the time. The jury, after a brief consultation, returned a verdict of accidental death. Although retired from the Army Medical Service Lieutenant-Colonel MacSwiney for a considerable time had had charge of the Liverpool district for examining recruits. He was 63 years of age. The funeral took place at Birkenhead Cemetery on Oct. 7th and was largely attended by residents of the district and medical friends.

*Healthy Liverpool: Abnormally Low Death-rate.*

The past week's birth-rate was 33·7 per 1000 of the estimated population of 730,143. The death-rate was 15·8 per 1000, as against 23·1 a year ago. There had been 38 deaths from zymotic disease, 20 being due to diarrhœa. The zymotic cases under treatment in the infectious hospitals included: scarlet fever, 589; typhus fever, 3; typhoid fever, 8; and diphtheria, 52. Mutual congratulations were indulged in by members of the health committee regarding the low death-rate. Dr. Hope, the medical officer of health, said that it was not a record, as the death-rate in June last was 14·3 per 1000. For the period of the year, however, it was a record.

*The Sanitation of Liverpool and the Maltese Government.*

The Maltese Government has been so impressed with the training of members of its sanitary staff in Liverpool that three more men are to be sent to Liverpool to be trained as sanitary inspectors.

*St. Luke's Day and the Medical Profession.*

The annual service for members of the medical profession in Liverpool and suburbs on St. Luke's Day will be held on Sunday next, Oct. 15th, at St. Luke's Church, when the sermon will be preached by the Bishop of Ripon. The collection will, as usual, be devoted to the Medical Benevolent Fund.

*New Cheshire Hospital.*

The Mid-Cheshire new joint isolation hospital, near Davenham, was opened on Oct. 2nd by Mrs. Wilbraham who was presented with a gold key, in the presence of representatives of the Cheshire county council and constituent authorities. The hospital has cost £12,000 and contains 34 beds for scarlet fever and typhoid fever to serve a population of 50,000 in the joint districts of Northwich, rural Northwich, Winsford, and Middlewich urban. It is the first joint hospital under the compulsory order of the Local Government Board.

Oct. 10th.

## NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

*University of Durham.—Examination Results.—Convocation.*

AT the examinations for medical degrees just concluded there were 28 candidates for the degrees of Bachelor of Medicine and Surgery and of these 16 were successful. Six candidates obtained the M.D. degree, the gold medal for the year falling to Lieutenant A. H. Proctor, I.M.S., for his essay on the Leishman Donovan Parasite. For the M.D. degree for practitioners of 15 years' standing there were 21 candidates, and of these ten satisfied the examiners. For the M.S. degree there were two candidates, both of whom were successful; for the D.Hy. one candidate presented himself and was successful; and for the D.P.H. there were three candidates, of whom two were successful. At the Convocation, held in the Castle Hall at Durham on Sept. 30th, the honorary degree of D.C.L. was conferred on Sir Isambard Owen, principal of Armstrong College. Sir Isambard Owen was presented for the degree by Sir George Hare Philipson, who said that in Sir Isambard Owen's enrolment among honorary members of the University of Durham the University was placing the name on its books of an educationist versed in science and proficient in forwarding the development of natural powers by inculcation and by example.

*Changes at the College of Medicine.*

Since the death of Dr. James Murphy, one of the members of the College, the following changes have taken place. Dr. David Drummond having resigned the lectureship of pathology becomes the colleague of Sir George Hare Philipson in the chair of medicine, and awaiting the approval of the Warden in Convocation, Dr. R. A. Bolam becomes the lecturer in pathology and Dr. James Limont in medical jurisprudence in place of Dr. James Murphy. During the present session Dr. Bolam will continue to assist Dr. Thomas Oliver in the chair of physiology and will carry on his classes in practical physiology but at the end of the session a lecturer on histology and practical physiology will be appointed.

*Changes at the Royal Infirmary, Newcastle-upon-Tyne.*

On Sept. 14th Mr. George Halliburton Hume, the senior surgeon to the infirmary, placed his resignation in the hands of the committee, having attained the age limit. Mr. Hume has 36 years of faithful hospital service to his credit, having been appointed assistant surgeon in 1869 and full surgeon in 1878. It was with great regret that the committee perforce received the resignation and he was immediately appointed honorary consulting surgeon to the institution. On Oct. 5th the committee proceeded to the election of a surgeon to fill the vacancy. There were two candidates, Mr. H. B. Angus, assistant surgeon since 1896, and Mr. J. V. W. Rutherford, assistant surgeon since 1897. 40 members voted for Mr. Angus and 13 for Mr. Rutherford. The former was therefore declared elected. On the same day the following house appointments were made:—Junior house physician, Dr. Colin McDowall; house surgeon to Mr. J. R. Morison, Dr. L. A. H. Bulkeley; house surgeon to Mr. G. W. Ridley, Dr. Henry Reah; house surgeon to Mr. A. A. Martin, Dr. L. S. McBean; house surgeon to Mr. H. B. Angus, Dr. G. E. Lloyd; and accident room house surgeon, Dr. W. E. Craven Lunn.

Oct. 10th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Opening of the Dunfermline College of Physical Training.*

THE Carnegie College of Hygiene and Physical Training, which is its full designation, was formally opened in Dunfermline on Oct. 4th. The college is part of the great gift of money which Mr. Andrew Carnegie has given for the benefit of Dunfermline. The buildings contain a thoroughly equipped gymnasium, which is said to be unsurpassed in Britain, and a swimming bath. Mr. John Ross, LL.D., who is chairman of the Carnegie Dunfermline trustees, occupied the chair at the inauguration ceremony and in his remarks from the chair said that they found themselves in possession of buildings, apparatus, and an endowment probably unequalled in the world. The work of the college was twofold: they had first what might be called a great practising school with 4500 pupils, consisting of all the school children; and next they had the college proper, consisting of young women who were prepared to adopt the teaching of physical culture as a profession, or who sought to acquire a knowledge of themselves and of the most rational rules of life. Meanwhile they were only receiving young women but they fully anticipated to be able to receive young men also in the near future. He said that so far they had received nothing but encouragement from teachers, parents, and the children themselves. The children came with alacrity and it was found to help lessons, not to hinder them. With regard to the second department of the work there was a strong feeling throughout the country in favour of physical culture and hygienic conditions but the number of competent teachers was small. The aim of the college was to supply such teachers to the whole country. This they could do owing to their thorough equipment, admirable staff, ample endowments, and the children and others already undergoing training. The college was formally opened by the Marquis of Linlithgow, the Secretary of State for Scotland. He said that the endowment of the college by the Carnegie trustees was really an after-thought. The object at first was to provide a gymnasium and swimming bath for Dunfermline but it was represented to the trustees by some of the highest educational authorities that there was no provision in Scotland for the instruction of teachers in physical training and that they might take that work up. They showed their broad-mindedness in being guided by these suggestions and in deciding to link a local benefaction with a national service. He referred to the fact that the country was waking up

to the necessity of some sort of physical training for the young people and to a better understanding of the laws of hygiene. He then proceeded to indicate what physical training really meant: that it was not a teaching of gymnastics for their own sake but the careful development of the general health to the advantage of the whole body and indirectly to the advantage of the mind. He showed how modern conditions of life differed from past conditions and how they must affect the physical and mental condition of the people. He said that he was one of those who believed that the difficulty of the present conditions could be best met by a thorough system of physical training for the young people and by a careful study of the laws of health in the schools. He believed that the Carnegie trustees were doing a very great and valuable service to Scotland in taking up this matter as they were doing. Sir John Batty Tuke, M.P., next addressed the assembly. He referred approvingly to the wide view which the trustees had taken of their duty in founding a college to which those who wished to study practical hygiene would flock. It would for that purpose be the centre for Scotland. He next referred to the reports of the Royal Commission on Physical Training and its Relation to Education and the Inter-Departmental Committee on the alleged deterioration of the national physique. As regarded the necessity for physical training in association with mental training both reports agreed. Independently of contemplated legislation the Scottish Education Department had to a great extent taken the matter into its own hand and had appointed an inspector of physical training whose duty it was to exercise supervision on the methods adopted in the various schools. It had also prepared and issued a model syllabus of physical training, the employment of which was strongly urged in a special memorandum. He himself thought the training ought to be non-compulsory; he would prefer that a sense of its value should permeate the public mind through the medium of the schoolmaster. Further, he thought that in providing and carrying into effect the medical inspection of children the Trust and the School Board were exercising one of the highest hygienic measures and were setting an example which it was to be hoped would soon be widely followed. It was obvious that underlying any scheme for the improvement of the general health of the community some system of medical inspection of schools was an absolute necessity. After the ceremony at the college, which was attended by a large and distinguished company, a luncheon was given by the Trust in the City Chambers. Dr. Ross presided and the toast of "The College" was proposed by Lord Elgin. Whilst he expressed his loyalty to the college he said that he did not accept all that was said about present-day physical deterioration. There were no doubt flaws but there always had been. He supposed there were at the time of King Robert the Bruce but they wanted as good and capable men as there were at the time of the Battle of Bannockburn. What he deprecated was the very wholesale depreciation which sometimes seemed to take hold of their countrymen.

### *The Water-supply of East Stirlingshire.*

The new water-supply for East Stirlingshire was formally turned on last Thursday. This is a district in which there was much difficulty about the water-supply and was one in which the scarcity of water was well known. In 1901, however, the present scheme was decided upon and it has now been successfully completed. The works are situated on the upper tributary streams of the river Carron and have been carried out at an expense of £112,000 exclusive of land and servitude, surface drainage, Parliamentary expenses, &c. The net supply of water for the district from the new reservoir amounts to 966,700 gallons per day. The pipe system extends to about 80 miles. The water-rate is to be at the somewhat high figure of 2*s.* 7*d.* per £1.

### *Sanitary Condition of the Lews.*

In THE LANCET of Sept. 23rd reference was made to a report recently issued on the sanitary condition of crofters' dwellings in the Lews. This report embodied the opinions of Dr. Frederick Dittmar and Mr. A. B. Millar who were appointed by the Local Government Board to visit the island and to report on the conditions there found. They discovered an appalling state of dirt and squalor in the hovels of the poorer inhabitants. The cottages, as a rule, were built of loose stones with a turf roof, the walls sometimes being wholly of turf. In the best cottages the living room, sleeping room, and byre were divided by partitions but in some cases the human beings shared one room with the cattle, and holes in the thatch provided exit and entrance for the fowls which nested in baskets hung against the walls. Outside the houses the ground was sodden with water and drainage from the byres and was altogether in a most unsightly and insanitary state. According to the report the water-supplies, with few exceptions, consisted of shallow dip wells liable to all kinds of surface pollution, and when near houses often situated in the most low-lying and boggy ground and with nothing to prevent animals having free access to them. The report was accompanied by a number of photographs showing groups of cottages built on the slopes of hills with the consequent conditions of drainage. An epidemic of enteric fever began in the top house of one of these groups and gradually spread to all the others at lower levels from the contamination of the stream flowing past them—their drinking and washing water. The whole report is a dreadful revelation of the state of affairs that can still exist in the remoter communities in this twentieth century and the question is who is to blame. A copy of the report has been forwarded by the Local Government Board to the local authorities, accompanied by a letter in which it is insisted that effective measures must at once be taken to deal with the various nuisances which are specified in detail in the report. It is pointed out also that no effective progress can be made without more energetic action on the part of the local authority and a reorganisation of the executive system. At a meeting of the Lews district committee held last week at Stornoway, Provost Anderson, the chairman, said that the district committee had been dealt with very unfairly in the matter of this report. It was quite unnecessary for Dr. Dittmar and Mr. Millar to go to the Lews to prepare their recent report, for the whole matter was fully set forth in a memorial submitted by the Lews district committee to the Local Government Board nine years ago. He quoted as follows from the memorial: "On inquiry we found that the only really effective remedy would be the demolition of the present buildings, which were condemned both as to structure and site, and could never, even if the byres were removed, be rendered sanitary. Such a reform we could not face. The structure and the site difficulty we could not overcome. We had no money for compensation in case of demolition and we had no power over sites to grant new ones." The memorial then went on to say that what was needed was a monetary grant to be spent judiciously in promoting sanitation and without this the sanitary problem could never be adequately dealt with. To this memorial the committee received no answer, nor did it obtain the assistance desired. In the circumstances the chairman thought they had just cause for complaint that the recent report had been published broadcast over England, Scotland, and Ireland. Proceeding, he took up a few of the more damaging statements in the report and answered them. As regards the water-supply he stated that during the past five years they had constructed over 40 new wells, many of them with pumps, at the cost of £444. They had also, in conjunction with the Ladies Highland Committee, provided two nurses for each of the four parishes at the cost of £250 a year for salaries, and they had selected sites for rural hospitals and would have proceeded with their erection but for the fact that their public health assessment had already reached its maximum and that they could not borrow for their erection. With reference to the housing of the people, before the publication of the report the committee had served a notice on every householder in the Lews where human beings and cattle were housed under the same roof, giving them six months in which to have byres properly partitioned off from the dwellings, and some years ago they had instituted proceedings in a number of typical cases. The feelings of the district committee have evidently been hurt by the publication of the report. Everyone seems to be agreed that the sanitary conditions of the Lews are not what they should be, but for the outsider it is difficult to say on whom the greater share of the blame should be laid for this state of matters. Possibly the district committee has not been as energetic as it might have been, but surely the Local Government Board itself is not without blame in the matter.

Oct. 10th.

# IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Royal Academy of Medicine in Ireland.*

THE report of the Royal Academy of Medicine, which reached the Fellows on Oct. 7th contains some matters of importance. The number of Fellows for the session 1904–05 was 223, of members 31, and of student associates 16. The Fellows increased by four, the student associates by five, while the members decreased by one. The improvement in the financial condition of the academy still continues. The interest taken by Fellows and Members in the sectional scientific meetings has apparently decreased, for the attendance leaves much to be desired. After considering this problem a committee of the sectional secretaries recommended that all the scientific meetings of the academy should have the various interests represented at each meeting, in other words that the sections should cease to exist. The council agreed to a modification of this proposal and advised the following: (1) that certain meetings in each session should be general—i.e., different interests being represented at such meetings; and (2) that living specimens and recent post-mortem specimens should be exhibited by permission of the sectional president and secretary without notice thereof appearing on the agenda paper. The council records with regret the loss to the academy by the death of the following Fellows: Professor Ambrose Birmingham, Mr. J. Lilly Lane, Dr. Charles F. Moore, Dr. W. A. V. Lush, Dr. W. C. Neville, Professor C. R. C. Tichborne, and Dr. Browne (Delgany).

### *Royal Veterinary College of Ireland.*

The sixth annual meeting of the Royal Veterinary College of Ireland took place on Oct. 7th, Sir Christopher Nixon occupying the chair. The Lord Lieutenant distributed the prizes to the successful students. Professor Mettam, principal of the College, opened the proceedings with a statement as to the progress of the College during the past year. He also announced that at a meeting on the previous day of the Royal College of Veterinary Surgeons of England Sir Christopher Nixon was elected an honorary associate of that College. Professor Woolridge delivered an interesting address dealing chiefly with the present epidemic of epizootic lymphangitis in horses and the means for its prevention. His Excellency the Lord Lieutenant made a long and interesting speech in which he said that nothing could be more advantageous than that the Royal University of Ireland might arrange to confer degrees for veterinary science.

### *Newtownards Water-supply.*

The Local Government Board, before granting formal permission to raise a loan of £18,000 asked for by the Newtownards urban council for a water-supply, suggested that gaugings of the water should be taken throughout the dry season by the engineers appointed by the council. This has been done and it was reported to a meeting of the urban council on Oct. 2nd that there were only three weeks during the whole season when there would not have been full consumption and even then there would have been over 18 gallons per head per day for every man, woman, and child in Newtownards, a fairly satisfactory result. It was decided by a majority to ask the Local Government Board to hold another inquiry for the purpose of carrying out a water scheme for the town and the engineer is to supply the gaugings taken since the last inquiry—that is, the number of gallons that flowed each month.

### *Rainfall in Belfast in September.*

During September 1·99 inches of rain fell in Belfast on 22 days (which is considerably below the average, 3·59 inches). The total rainfall for the year is now 28·90 inches, which is half an inch below the average.

### *The O'Neill Memorial School.*

On Sept. 30th the O'Neill Memorial School, Crossnacreevy, county Down, which has been erected as a memorial to the late Mr. James O'Neill, M.A., who was for many years engaged in teaching in Belfast, was opened. The Right Hon. Mr. Justice Andrews presided and Mrs. Thomas Andrews, wife of the Right. Hon. Thomas Andrews, D.L., chairman of the Down county council, performed the ceremony of opening the school. The school is situated on the main road from Belfast to Ballygowan, near the late Mr. O'Neill's native place, and is in every respect a suitable one for the education of the children of the district. The amount of subscriptions already received is over £700 and a sum of £200 is still needed. A resolution was carried at the meeting cordially recommending those who have enjoyed the friendship of the late Mr. O'Neill to assist in bearing the expense of the furnishing and equipment of the school, so as to have it opened free of debt. Dr. H. O'Neill, high sheriff of Belfast, Mr. J. O'Neill's brother, is treasurer of the memorial fund.

### *Belfast District Lunatic Asylum.*

At a meeting of the committee of management of the Belfast Asylum, held on Oct. 9th, Dr. W. Graham, resident medical superintendent, presented a report on the training of imbecile children, urging that some provision should be made for the imbeciles and idiots, when, after a discussion, a proposition was unanimously carried, on the motion of the Earl of Shaftesbury, re-affirming a resolution of Oct. 13th, 1902 (which drew the attention of the Chief Secretary to the effect that the inspectors of lunatic asylums had reported to the Lord Lieutenant the absolute necessity for a national institution for the training and maintenance of imbecile children in Ireland). In case this had no effect a deputation is to wait upon the Chief Secretary for Ireland on the subject.

Oct. 10th.

# PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *Impairment of Vision caused by Hair Dye.*

SERIOUS effects of one kind or another have on various occasions been traced to the use of substances which alter the colour of the hair. Oxygenated water which makes dark hair light coloured may bleach it and dyes containing aniline products have often given rise to severe and intractable skin diseases spreading from the scalp to the face. Dr. Berger has just recorded a case of a kind hitherto unknown in which impairment of vision occurred without any recognisable cause except the use of a dye bought from a hairdresser and found to contain an aniline product. The patient, who was a young woman in good health, had trouble with her left eye which on examination was discovered to have a central scotoma. As she at the same time complained of headache Dr. Berger concluded that her condition might be due to poisoning by the hair dye and when it was discontinued all the symptoms disappeared in a few days.

### *Illegal Practice of Medicine by a Masseur.*

A decision of some interest to the medical profession was recently given in a Paris police-court. The circumstances were that a masseur not possessed of any medical qualification was charged with having for the last three years attended medical and surgical cases without any diagnosis of them having been made by a medical man and without massage having been prescribed. He moreover distributed advertisements in which he promised to cure sprains at a single sitting and a number of diseases very speedily, so that patients came to him for massage without medical authorisation. The court adjudged him to pay a fine of 100 francs.

### *Complete Removal of the Stomach for Cancer.*

At the meeting of the Academy of Medicine held on Oct. 3rd M. Jules Boeckel read an account of a case in which the whole stomach was removed on account of a cancerous growth which, starting in the lesser curvature, had invaded nearly the whole of the gastric cavity. The patient, who recovered in three weeks' time, was a man, aged 43 years, and his illness had commenced six months previously to operation with a marked loss of flesh but without any very noticeable gastric trouble. Operation was performed on July 31st and during the following few weeks the patient gained 18 pounds in weight. In cases of this kind it is most important to make an early diagnosis if permanent benefits are to be expected and it is this point which is the great difficulty.

### *Researches into the Diet of Phthisical Patients.*

As the Congress on Tuberculosis is so much to the fore at present and is in process of dealing with many subjects most important as regards tuberculosis I think it right to send you a *résumé* of some researches in which Dr. Albert Robin and his colleague, Dr. Binet, have been engaged for some time past. The research was concerned with the dieting of

tuberculous patients on three kinds of diet—namely, raw meat, eggs, and gelatin. With gradually increasing rations of raw meat added to a dietary absolutely similar in all the patients the respiratory exchanges showed variations. With raw meat given up to an amount of 150 grammes per diem the respiratory exchanges fell. As the meat was increased up to 200 grammes the respiratory exchanges rose without exception and very nearly in direct ratio to the quantity of meat taken. Hence it follows that tuberculous patients are often overfed with raw meat and that the physician should not give more than 150 grammes per diem for fear of seeing an excess of animal food bring about a stimulation of those tissue exchanges which are already a factor in the morbid condition of phthisical patients. Even though the appetite and the digestive powers of the patient seem to warrant an increase in the diet the physician should make sure that to grant this increase will not also increase the respiratory exchanges. In the case of eggs, if 12 eggs per diem are added to the ordinary diet of a phthisical patient the respiratory exchange increases by 13·75 per cent., the formation of carbonic acid by 20·84 per cent., and the total consumption of oxygen by 8·78 per cent. If the number of eggs is reduced to six the respiratory exchanges fall by 20·35 per cent., the carbonic acid by 13·26 per cent., and the total amount of oxygen consumed by 25·34 per cent. As the patients gain in weight just as much while taking six eggs as while taking 12 and are equally well in other ways it appears that the smaller number is the right one to give. With regard to gelatin, if 20 grammes of this substance be added to the carefully-regulated hospital diet of a phthisical patient a rapid fall in the respiratory exchanges is noted—namely, from 10 to 18 per cent. of their total amount. This economising action of the gelatin is only noted when it is administered regularly and is well borne. Too much raw meat must not be given to patients who are taking gelatin for fear of inhibiting the action of the latter upon the rate of respiratory exchange. If, however, a daily ration of from 100 to 150 grammes of raw meat is given in addition to gelatin the action of the latter continues unimpaired or is even increased. It is therefore evident that the addition of gelatin to the diet of a phthisical patient is justifiable.

Oct. 10th.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

### *A Supernumerary Tooth in the Nose.*

Dr. Otto Kahler, of the laryngological clinic, some time ago had under his care a man, aged 29 years, who complained of difficulty in breathing through the nose. Several years ago the patient had a plastic operation for a defect of the lower part of the nose performed at a surgical clinic. It appeared that he had had a nasal gumma when a child and this had destroyed a great part of his nose, which now presented the saddle shape seen in syphilitic subjects. Anterior rhinoscopy revealed a total absence of the septum nasi and the inferior turbinated bones on both sides. A hard white substance was seen lying imbedded in the floor of the nasal cavity, about three-quarters of an inch from the nares, projecting about half an inch into the cavity. After careful cleansing it was recognised to be the crown of a tooth. Examination of the alveolar processes showed that all 16 teeth, or at least their broken and carious roots, were present so that the nasal tooth was a supernumerary one. The extraction of this tooth was very difficult. Tooth forceps could not be used on account of the narrowness of the introitus nasi, which was rendered still more narrow and rigid by the cicatricial tissue. Dr. Kahler succeeded in loosening it by means of an elevator, but the patient suddenly jerked his head and the tooth disappeared into the œsophagus and stomach, but was passed from the bowels after the lapse of three days, during which plenty of potatoes and bread had been eaten. It was found to be most likely a canine tooth. In nearly all the recorded cases such anomalous teeth have been associated with congenital syphilis, which perhaps by disturbing the normal ossification favours displacement of the dental germs. This dental anomaly was first recognised by the famous poet Goethe who was also a very observant man of science and who mentioned a case of the kind in his "Journey to Switzerland in 1797," when he was studying the praemaxilla.

### *Clinical Appointments in Prague.*

In connexion with the German University of Prague there is a large clinical hospital the assistants in which are selected not in accordance with any definite system but solely at the discretion of the professors. Now the position of assistant in a clinic is a much coveted one, because these gentlemen, being very advantageously placed as regards both scientific and practical work, not only have good incomes but have also good prospects and are in a fair way to attain the position ultimately of docent or professor. For several years past in Prague all such posts have been given to relatives of the professors, such as their sons and nephews, and a number of young medical men who were outside this circle and were aggrieved by its exclusiveness formed an organisation for the protection of their interests. This movement was regarded by the professors with disfavour and when a vacancy recently occurred in the gynæcological clinic the man who was next in rank and also in ability was passed over because he belonged to the organisation and a nephew of a professor was chosen. This was the signal for nearly all the staff presenting a formal statement of their grievances, which has been handed to the Senate of the University but as yet without producing any result. A strike then ensued, all the juniors and seniors resigning their offices, so that the work of the wards had to be done by the assistants and professors and a few young medical men who were called in from other places, but the duties seem to be too heavy for them as the hospital is just now filled with patients. Since the Senate of the University declines to interfere with what it terms "a private affair," the organisation has decided to lay the matter before the Minister of Public Instruction in order to obtain an authoritative decision.

### *Precautions against Cholera.*

The measures adopted by the Ministry of the Interior against the invasion and spread of cholera have been of a very stringent and, as far as can be seen, of a very efficient nature. All persons arriving in Austria from suspected places, such as Prussia, the Russian frontier, and towns on the river Vistula, have to report themselves to the sanitary officials and to remain in quarantine for five days. Persons presenting suspicious symptoms will be immediately isolated and a thorough disinfection of their wearing apparel and other effects will be carried out, their excreta will be examined bacteriologically, and in the event of death occurring a post-mortem examination will be made. A sufficient number of trained nurses and medical officers are kept in readiness for any sudden outbreak, and all junior officers of the hospital staffs have been invited to volunteer their services in case of need wherever they may choose. Up to the present time only six cases with three deaths have been reported in the whole of Austria-Hungary.

### *The University of Vienna.*

The figures showing the number of students in the various faculties of the university during the summer term of 1905 have now been published. The number of students in all branches was 6500, of whom 1220 studied medicine. There were 247 matriculated women students, including 92 in the medical faculty. Many foreigners came to Vienna for the purpose of studying medicine, comprising 128 gentlemen from America, two from Asia, three from Australia, and 59 from England; they were mostly qualified practitioners, some of whom held the degree of M.D. There are a few vacancies in the staff of several medical institutions—namely, in the first clinic for internal medicine, the laboratory for experimental pathology, and the pharmacological and embryological institute.

### *Birthday of Professor Politzer.*

Dr. Adam Politzer, professor of otology in the University of Vienna, celebrated all over the world as a pioneer of his branch of medicine, completed his seventieth year recently. His anatomical publications, his sections, and his "Atlas of the Drum and Auditory Ossicles" have carried his fame across the ocean. He introduced the method of inflating the Eustachian tube with air by means of "Politzer's bag." Of the hearty congratulations which have been transmitted to him from all parts of the world a large proportion came from America.

### *Action for Damages against a Medical Practitioner.*

The High Court of Justice has just ordered a practitioner to pay damages and costs for an operation which, as the patient alleged, he had promised would not only restore the

sight of the right eye but would also improve the left eye. It appeared that the patient, who had sought advice from various ophthalmic surgeons, was induced by the promises of the medical man in question to submit to an operation which proved to be a failure, as inflammation occurred and necessitated enucleation. The evidence given by several consultants showed that the patient had suffered from glaucoma with atrophy of the optic nerve and that an operation would have no beneficial but only an injurious effect. It was proved on behalf of the patient that this was not the first charge of a similar nature against the same practitioner, for he had been implicated a few years ago in a case in which damages were awarded in connexion with an operation for cataract. In giving judgment for the plaintiff the court awarded him £150, stating that the responsibility of the surgeon began when he gave his advice.

Oct. 6th.

## CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

### *Oriental Street Barbers.*

How forward the members of the *Conseil Sanitaire* of the Turkish metropolis are is shown by the fact that their attention is at present extended even to the numerous ambulating street barbers, who form quite a characteristic feature of the public life in the Orient generally and in Constantinople in particular. It is a very common thing on the banks of the Bosphorus, and especially in the quarters inhabited by Mahomedans, to see such a barber exercising in the very middle of the street this art of shaving on the beards, as well as on the heads, of the faithful Islamites. These street *coiffeurs* are, as a rule, very dirty and have not the slightest idea of even the most primitive sanitary and hygienic principles. They never clean their basins, razors, and scissors, and use them with cool-blooded Oriental indiscrimination to attend to every chance street customer however filthy. The dangers to public health accruing from such a practice are self-evident. The *Conseil Sanitaire* has therefore ordered that the street barbers shall be controlled. Henceforward strict injunctions as to cleanliness and disinfection will be imposed upon them. The numerous coffee-houses which are, especially in Stamboul, almost invariably associated with a small apartment for a barber will be visited by sanitary inspectors at regular intervals.

### *The Extension of the Italian Hospital.*

The Consul-General of Italy, M. Ciapelli, has obtained from his Government the necessary funds for the construction of a pavilion for tuberculous patients in connexion with the Italian Hospital. Dr. Zeri, who is at present in Italy, will soon arrive here with all the plans of this pavilion which will be equipped with all the necessary modern requirements. It will have a male and a female ward and a specialist for tuberculous diseases attached to it. The Italian Ambassador, the Marquise Imperiali, takes a very warm interest in this important addition to the hospital.

### *The Discovery of a New Saponaceous Tree.*

Dr. Halil Hilmi of the Ottoman Maritime Service has discovered a tree the leaves and fruit of which are said to possess all the necessary qualities of saponaceous matter and could therefore be utilised for fabrication of soap. He communicated his discovery to the medical faculty as well as to the Ministry of Commerce and Public Works in asking them to let a specially appointed commission of chemists examine the properties of the tree. This has now been done and it has been found, as the Turkish newspapers published in Stamboul announce, that the fruit of this tree really possesses the properties attributed to it by Dr. Halil Hilmi. Two okes of the fruit yield one oke of perfectly good soap (one oke is about two and three-quarters of a pound). Detailed accounts of the tree are not available as yet. All the Turkish papers say is that it grows in hot climates. New experiments are to be made with the leaves, of which a large quantity is expected to arrive in Constantinople.

### *Midwives in the Turkish State Service.*

Fifty midwives have terminated their studies in the Imperial School of Medicine and will receive their diplomas on the anniversary day of the Sultan's birth, after which they will be sent to different *sandjaks* and *cazas* where there are no midwives.

### *Formalities to obtain Turkish Medical Diploma.*

The following are the regular steps to be taken by those foreign medical men who desire to pass the Turkish colloquium for the purpose of practising the healing art in the Ottoman Empire: (1) To present a petition and to pay the fees; (2) to see the medical council and to show the diploma; (3) the council to return the petition to the head of the school endorsed; (4) the head of that school to fix a day for examination; (5) the applicant's passport to be certified by the *Bureau de Nationalité*; and (6) the applicant to receive a diploma, to pay 20 piastres (about 3*s.* 6*d.*), and to take the oath.

### *A Barbarous Domestic Practice.*

During my visiting tour in one of the out-of-the-way districts on the Golden Horn I was suddenly startled by shrieks of a woman proceeding from a window of a Turkish house. Soon after I saw this woman running after me with cries to come to the assistance of her dying child. On my entering the house I found that this child was in extremis and struggling for breath. On closer examination it proved to be a case of diphtheria. To my great astonishment I found two fresh bleeding wounds, one in front of the neck just at the thyroid cartilage and one at the umbilicus. When I asked for the explanation of this I was informed by the mother of the child that an old Turkish woman told her that the disease was due to a worm barring the air passages and that a red-hot iron applied to the neck and umbilicus was sure to cure the condition. The barbarous operation was accordingly performed. I did what was necessary in the case. The child, however, died shortly afterwards. I learned later that such a cruel, savage practice is quite in vogue among the uncivilised followers of the Islam as well as among ignorant members of other religions, which latter are quite numerous on the banks of the Bosphorus.

Oct. 6th.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

### *The Curability of Cancer.*

A JUDICIAL opinion as to the curability of cancer may shortly be expected from the California courts. The State board of medical examiners revoked the licence of a woman practitioner who represented herself as having a certain cure for the disease on the ground that the law gives the board this power in dealing with any physician who may publish "grossly improbable statements" regarding his healing powers. The woman has declared her intention of bringing suit against the board for reinstatement and to prove that her claim is not "grossly improbable" has offered to cure any person suffering from malignant disease who may be selected by the members of the medical board.

### *The Report of the Pneumonia Commission.*

The increasing mortality from pneumonia during recent years led the New York board of health in October, 1904, to appoint a commission for the purpose of investigating the problems connected with the etiology of the disease. The pneumococcus itself was made the first point of attack, so that the first studies made have been principally bacteriological in nature. The investigators did their work in New York, Philadelphia and Boston, special problems being assigned to each laboratory. The preliminary report of the commission, containing nine separate contributions, representing the work of 21 investigators, has been published and contains much that is of interest. The chief matters studied were the occurrence and virulence of the pneumococcus and its congeners in the mouth in health and disease, the variability in the virulence of the pneumococcus, its occurrence in hospital wards, children's homes, &c., with a consideration of the buccal flora before and after outbreaks of pneumonia, the vitality of the pneumococcus under different conditions, and the subject of disinfection of the mouth. While largely of theoretical interest much of the information has a direct practical bearing and emphasises anew the necessity for restriction of public expectoration and for oral cleanliness, the antiseptic power of sunshine and ventilation, the undesirability of dry sweeping and dusting, &c. Some experimental basis is afforded for the hope that an efficient antipneumonic serum may be obtained and it is shown that

the species pneumococcus embraces many varieties, possessing widely differing degrees of virulence and oftentimes closely allied to the streptococci.

*Mortality on Shipboard among Immigrants.*

The Chief of the Bureau of Navigation of the Department of Commerce and Labour reports that during the past three fiscal years ending June 30th, 1905, from the ports of Europe 1,932,934 steerage passengers embarked for New York, of whom 423 died on the voyage, or about 22 deaths per 100,000 passengers. Allowing 12 days for the average voyage the rate is equivalent to an annual death-rate of about 6½ (6·56) per 1000. The highest monthly rate for the three years was in January, the month of smallest travel, there being 38 deaths out of 87,260 passengers in the steerage; the lowest rate, also 38 deaths out of 256,838 steerage passengers, was in May, one of the months of heaviest steerage travel to New York. Among the immigrants from Northern Europe there were 242 deaths out of 1,351,221 steerage passengers; among those from Southern Europe 181 deaths out of 581,713. Of the steerage passengers 31,873 were babies under one year and 116 more were born in the steerage, two mothers dying in childbirth; 126,993 were children over one and under eight years of age and 1,774,068 passengers were over eight years. Under eight years 211 died; over eight years 212. In the steerage 1½ died out of every 1000 children under eight years. Only one steerage passenger out of nearly 2,000,000 died on shipboard from accident, and only one from yellow fever; 23 committed suicide and seven disappeared. The principal causes of death were: heart failure, 75; pneumonia, 64; inflammation of the bowels, 40 (all children but five); meningitis, 34 (all children); convulsions, 28 (children); the remaining deaths were due to miscellaneous diseases.

*Casualties on Railroads in the United States.*

The Interstate Commerce Commission gives the casualties on the railroads of the United States for the year 1904 as follows: Passengers carried, 715,419,682; deaths, 10,046; passengers killed to passengers carried as 1 to 1,622,267; non-fatal injuries, 84,155; passengers killed, 441; passengers injured, 9111. Of the employés of the railroads it is reported that there were 1,296,121, of whom 9605 were killed and 75,044 were injured. A comparison of these figures with those of the preceding year shows a startling increase in the percentage of accidents to railroad passengers and employés, notwithstanding the great improvements in life saving devices adopted by the managers. The percentage of increase over the preceding year is as follows: Deaths, 183; non-fatal injuries, 83; passengers killed, 37; passengers injured, 31; employés killed, 197; employés injured, 92. The figures relating to employés is the more surprising because the percentage of casualties to this class is greatly increased though the number of employés in 1904 had diminished 1¼ per cent. from that of 1903. Compared with the railroad casualties of other countries, especially of Great Britain, the dangers to travellers and to employés would seem to suggest that the grade of officers and employés on our railways is greatly inferior, which is probably true.

*Growth of the American Medical Association.*

The American Medical Association has recently held its fifty-sixth annual session. Though it was organised half a century ago its growth has been very slow. For a long period its meetings were regarded as social gatherings, very enjoyable for the good fellowship which universally characterised them. Its direct influence upon the profession was very slight, whether we refer to its scientific, practical, or ethical spirit. A few papers were read, a desultory discussion followed, a grand dinner was attended, and the great American association had accomplished its purpose. All is now changed. The association is recognised as a controlling power in the medical profession throughout the country. It dictates the grade of education of the schools, the standard of medical ethics, the forms of Congressional medical legislation, and more and more it is illustrating the most advanced position of the medical sciences. It has valuable property in the city of Chicago on which it has erected its business offices, and it is rapidly accumulating a large permanent fund. It has recently effected a complete reorganisation of the profession of the entire country so that the remotest practitioner can have the same privileges as the metropolitan specialist. The result of the growth of the association is a more united profession and a consolidation of its diverse interests.

*Contract Surgeons in the Army.*

It has long been the practice of the authorities of the army to employ a large number of what are known as "contract" surgeons, or ordinary practitioners, living in the vicinity, to do military service. The Secretary of War has endeavoured to secure legislation which would enable him to dispense with these surgeons. The secretary stated to a committee in congress that "it is not a healthy attachment to any branch, but a collection of men that are neither fish, flesh, nor fowl, and I think the *esprit de corps* of the whole service would be very much better if the contract system could be entirely eliminated." The American Medical Association endorsed the action of the secretary.

Oct. 2nd.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Commencing Recrudescence of the Plague Epidemic in India.*

THE recrudescence of the plague epidemic is showing itself as in previous years in the Bombay Presidency. For the week ending Sept. 9th 2482 deaths were recorded, as against 2050 for the previous seven days. Of this number, 1745 occurred in the Bombay Presidency, 251 in the Madras Presidency, 68 in Bengal, 74 in the United Provinces, 3 in the Punjab, 67 in Burmah, 124 in the Central Provinces, 71 in Mysore, 45 in the Hyderabad State, and 34 in Central India. The recrudescence is showing itself chiefly in the Satara district where 665 deaths occurred, but in Kathiawar, Kolhapur, Dharwar district, and Belgaum increased numbers of deaths also occurred. The experience of the past few years shows that the epidemic begins afresh in the Bombay Presidency as the autumn comes round and the returns then mount up rapidly, while in Northern India the revival is delayed until the cold weather. It also shows itself earlier in Bengal than in Northern India. With so many centres—from Rangoon on the east to Karachi on the west—the prospects during the coming season are very unfavourable.

Sept. 22nd.

# Obituary.

### GEORGE WALKER THOMAS CLARKE, L.R.C.P., L.R.C.S. IREL.

Mr. George W. T. Clarke of Uxbridge, whose death occurred from heart disease on Sept. 25th, was a much respected practitioner and had made numerous friends in the town. His last illness was of only about a week's duration but it had for many months been recognised that little or nothing could be done to arrest the malady and Mr. Clarke awaited the inevitable result with fortitude. Born at Santry, Dublin, in December, 1861, he did not commence medical study until he had reached middle life and had already for a considerable time held the appointment of head mathematical master at St. Edmund's College, Cork. Having resolved to exchange the scholastic for the medical profession he became a student at Mercer's Hospital, Dublin, and took the diplomas of L.R.C.P. and L.R.C.S. Irel. in 1899. Soon after becoming qualified he practised at Walthamstow and about five years ago he entered into partnership with Dr. A. Charpentier of Uxbridge, where he obtained several appointments, including those of assistant medical officer to the local division of the metropolitan police and medical officer to the post-office and to the Uxbridge and Hillingdon Cottage Hospital. In his younger days Mr. Clarke took a great interest in football and had played for the Irish Rugby Union. Later he turned his attention to the Volunteer service and became surgeon-lieutenant in the "E" Uxbridge Company, 2nd V.B. Duke of Cambridge's Own Middlesex Regiment. At the funeral, which took place on Sept 28th, military honours were accorded, the coffin being conveyed to Hillingdon Cemetery on a gun-carriage, followed by the regimental band. The firing party numbered about 40 men from the Uxbridge and Staines companies. Representatives of the police, the post-office, and the Uxbridge fire-brigade

were also present, in addition to a large and sympathetic gathering of the general public. Mr. Clarke has left a widow and three children.

### JAMES R. CHADWICK,

BOSTON, U.S.A.

BY the death from an accident of Dr. J. R. Chadwick the medical profession in America loses a well-known member and Boston one of her most public-spirited citizens. He was born in 1844 and graduated from Harvard in 1871. He took up the study of diseases of women in connexion with his father-in-law, Dr. Lyman of Boston, and became one of the most active and industrious of American workers in this field. For many years he was an active spirit in the American Gynecology Society and was its first secretary and its president in 1897. His enduring monument is the Boston Medical Library of which he was the founder in 1875 and of which, until his death, he remained the honorary librarian. Under his guidance it grew steadily until it now ranks as one of the most complete medical libraries of the world. Only a few years ago the collections were moved into a beautiful new building. Last year Dr. Chadwick had the satisfaction to receive a donation for it of £30,000. The library is an illustration of how much the persistent, untiring energy of one man may do in a community. For years he never went out of town without a large manuscript volume of "wants," equipped with which he became a very familiar figure in all the old book shops both of America and Europe. The generosity, too, with which he helped others on both sides of the Atlantic to fill their deficiencies brought him into intimate contact with medical librarians and bibliophiles by whom his death will be sincerely mourned. Personally he was a delightful companion with a strongly artistic, even Bohemian, temperament which made his house a rendezvous for the lighter spirits in and outside of the profession.

# Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examinations the following candidates passed in the subjects indicated :—

PART I.

*Biology.*—G. F. Malden, Royal Free Hospital; and J. B. Moore, Liverpool.

*Chemistry.*—J. B. Moore, Liverpool; and S. W. Turtle, London Hospital.

*Materia Medica and Pharmacy.*—U. J. Bourke, London Hospital; A. C. J. Elwin, King's College Hospital; E. C. R. Fisher, Royal Free Hospital; J. B. Moore, Liverpool; E. A. Mordaunt, Royal Free Hospital; and N. C. Wallis, London Hospital.

PART II.

*Anatomy.*—E. H. Crawley, Guy's Hospital; and M. Graves, J. G. Morgan, V. P. Norman, and H. B. Waller, London Hospital.

*Physiology.*—W. J. Gibson and J. G. Morgan, London Hospital; G. Packham, Guy's Hospital; and H. B. Waller, London Hospital.

UNIVERSITY OF DURHAM.—At the Convocation held on Sept. 30th the following degrees and diplomas were conferred :—

*Doctor in Medicine.*—Gerald Burton-Brown, M.B., B.S. Durh.; Joseph James French, M.B., B.S. Durh.; Allen Holmested Hobbs, M.B., B.S. Durh.; John George Ogilby Hugh Lane, M.B., B.S. Durh.; Arthur Alan Miller, M.B., B.S. Durh; and George James Williams, M.B., B.S. Durh.

*Doctor in Medicine for Practitioners.*—William Baron Cockill, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.; John Arthur Coleclough, M.R.C.S. Eng., L.S.A.; Frank Fowler, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.; George Martin Fox, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., D.P.H.; Charles Ronald Handfield-Jones, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.; Robert Thomas Herron, M.R.C.P. Edin., L.R.C.P. & S. Irel.; William Thomas Kelly, M.R.C.S. Eng.; John Paterson, L.R.C.P. & S. Edin.; Charles Edwin Solomon, L.R.C.P. & S. Edin.; and Douglas Wilson Wright, L.R.C.P. & S. Edin.

*Doctor in Hygiene (D.Hy.).*—Thomas Morrison Clayton, M.D., B.S., B.Hy. Durh., D.P.H.

*Master in Surgery (M.S.).*—John George Ogilby Hugh Lane, M.B., B.S. Durh., F.R.C.S.; and Joseph Collingwood Stewart, M.B., B.S. Durh.

*Bachelor in Medicine (M.B.).*—Frederick Durnford Atkins and George Nixon Biggs, St Thomas's Hospital; Hugh Boyd Cunningham and Saville James Fielding, St. Thomas's Hospital and College of Medicine, Newcastle-upon-Tyne; James Glenny Gibb, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Marshall Haver, Frederick Robert Henry Laverick, Cyril Claude Lavington, William Ernest Craven Lunn, Samuel Leslie McBean, John Charles Norman, and Robert Rutherford, College of Medicine, Newcastle-upon-Tyne; Herbert James Slade, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Francis Rupert Snell, St. Thomas's Hospital; and Tys Visser and James Leslie Wilson, M.A., College of Medicine, Newcastle-upon-Tyne.

*Bachelor in Surgery (B.S.).*—Frederick Durnford Atkins and George Nixon Biggs, St. Thomas's Hospital; Hugh Boyd Cunningham, College of Medicine, Newcastle-upon-Tyne; Saville James Fielding, St. Thomas's Hospital and College of Medicine, Newcastle-upon-Tyne; James Glenny Gibb, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Marshall Haver, Frederick Robert Henry Laverick, Cyril Claude Lavington, William Ernest Craven Lunn, Samuel Leslie McBean, John Charles Norman, and Robert Rutherford, College of Medicine, Newcastle-upon-Tyne; Herbert James Slade, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital; Francis Rupert Snell, St. Thomas's Hospital; and Tys Visser and James Leslie Wilson, M.A., College of Medicine, Newcastle-upon-Tyne.

*Diploma in Public Health (D.P.H.).*—Thomas Henry Bishop, M.R.C.S. Eng., L.R.C.P. Lond., and Henry Curwen, M.B., Ch.B. Edin.

THE NEW CANCER RESEARCH LABORATORIES AT THE MIDDLESEX HOSPITAL.—Eight rooms on the ground-floor of the cancer wing of the Middlesex Hospital have recently been fitted up as laboratories suited to cancer research work, thus enabling each member of the staff to do his work undisturbed. This is an important departure and should make more effective the work which has been carried on at this hospital since the cancer department was founded in 1792. The new cancer wing of the hospital was added in 1900 and since that time much valuable work has been done under the able directorship of Dr. W. S. Lazarus-Barlow. It is to be hoped that under the new arrangements the workers in the cancer department at the Middlesex Hospital will be able to add at no very distant date some useful facts to the knowledge of cancer which we at present possess, though we must not be too sanguine of results when we consider how up to the present time the cause and nature of cancer have baffled the minds of those able investigators who are engaged in searching for the etiology of the disease. One effect of the ever-increasing activity which the medical profession is showing in its endeavour to master this disease should be to convince the public that quack remedies are of no value except to those who by selling them thrive on the credulity of their victims; for the Middlesex Hospital has ever been ready, as have also other institutions where cancer is treated, to try any new remedy which even remotely promises success. There is no lack of willing investigators, it rests with the public to supply the necessary funds.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at 6, Suffolk-street, Pall Mall, London, on Oct. 5th, Dr. F. H. Champneys being in the chair. Under Section 2 of the Midwives Act any woman who, within two years from the date of the Act coming into operation, claims to be certified under the Act shall be so certified provided she holds a certificate in midwifery from the Royal College of Physicians of Ireland, or from the Obstetrical Society of London, or from the Coombe Lying-in Hospital and Guinness's Dispensary, or from the Rotunda Hospital for the Relief of the Poor Lying-in Women of Dublin, or such other certificate as may be approved by the Central Midwives Board. The certificate of the Belfast Maternity Hospital has not been approved by the Central Midwives Board up to the present time, but the matter again came up for discussion on the motion of Dr. J. Ward Cousins who moved that the resolution of the Board of March 23rd, 1905, refusing the request of the Belfast Maternity Hospital for the recognition of its certificate as an approved qualification under Section 2 of the Midwives Act be rescinded. Sir William J. Sinclair, who seconded this motion, prefaced his remarks by saying that he would not express his feelings on the matter but only his opinion. He contended that the Belfast Maternity Hospital had been treated illegally and he considered that its claim was a sound one. He urged the Board to undo a tyrannical act by rescinding the resolution. The following letter was read from the Privy Council :—"To the Secretary of the Central Midwives Board: Sir,—Referring to your letter of the 20th inst., with observations of the Central Midwives Board on Dr. J. W. Byers's complaint in regard to the non-approval by the Board of the certificate of the Belfast Maternity Hospital in the case of nurses trained at that institution previous to March 31st, 1905, I am directed by the Lord President of the Council to transmit to you the accompanying copy of a further letter from Dr. Byers on the subject and to request that you will move the Board to state whether they could not have seen their way to facilitate the certification of those nurses at the Belfast Maternity Hospital who had claimed to be certified previous to the receipt by the Board of a properly framed application by the hospital for the recognition of

their certificate under Section 2 of the Midwives Act. (Signed) A. W. FitzRoy, Clerk of the Council." The letter from Dr. Byers to the Clerk of the Privy Council was as follows: "Sir,—In reply to your letter of August 7th, 1905, I write to say that after consultation with Mr. Herbert Ewart (chairman of the board of governors of the Belfast Maternity Hospital) and the members of the medical staff in Belfast, I am instructed to say we are willing to accept an arrangement by which those nurses trained in the Belfast Maternity Hospital who have applied to the Central Midwives Board before April 1st, 1905, shall be placed upon the roll of certified midwives. (Signed) J. W. Byers." After these letters had been read Mr. E. Parker Young pointed out the advisability of carrying out the arrangement proposed by the Belfast Maternity Hospital which was acceptable to that institution and he accordingly moved an amendment to that effect, which was duly seconded, and on being put to the vote was carried. The Board then considered the number and approximate dates of examinations for midwives to be held annually in London and the provinces respectively. A plan which seemed to receive most support was to hold an examination every other month, but it was decided to discuss the question fully at the next meeting of the Board, fixing only the date for the next examination—namely, Feb. 6th, 1906.

"DR. BARNARDO'S HOMES."—In our issue of Sept. 23rd, p. 904, we mentioned that the great institution for the care of destitute children known as "Dr. Barnardo's Homes" was managed on sound principles and that its beneficent work would suffer no interruption in consequence of the lamented death of the founder. A charitable and philanthropic undertaking conducted on so large a scale as these homes, which at the present time have thousands of children under their care, not only involves a considerable outlay but sometimes has to deal with emergencies in which borrowing becomes necessary. In a letter published in the *Times* of Oct. 10th Lord Brassey (president), Mr. William Baker (chairman of the council), and Mr. Howard Williams (treasurer) make an appeal for the raising of a national memorial fund of £250,000 "to place the future of the homes in a position of security." Incidentally it is mentioned that the homes were founded in 1866 and that the total number of children rescued, trained, and placed out in life by them up to Dec. 31st, 1904, was 55,962. Contributions, either large or small, in aid of the proposed national memorial may be sent to the treasurer at the head office of the homes, 18 to 26, Stepney-causeway, London, E.

THE EXHIBITION OF THE BRITISH DAIRY ASSOCIATION.—The annual exhibition of the British Dairy Association, which opened at the Agricultural Hall, Islington, on Oct. 3rd and closed on Oct. 6th, contained many features of instruction and interest from a medical and sanitary standpoint, as must be the case in every large dairy show. It is unnecessary to insist how intimate a matter of concern it is, both to medical men and to the general public, that milk should be pure, and the most recent exhibition provided a valuable object-lesson in regard to the means to be employed for supplying the population with as pure an article as possible. Most of the recent methods of rendering milk and its by-products, butter and cheese, innocuous, while at the same time retaining their nutritive qualities, were on view and practical illustrations were given of making butter in a manner which combined cleanliness with efficiency and expedition. On the whole these demonstrations were impressive even when there is good reason to know that in Great Britain the milk industry, as a rule, is managed with considerable lack of ordinary care, if not with disregard of elementary sanitary principles. There can be but little doubt that cleanliness is the most important factor in insuring a pure milk-supply and it is equally certain that it is not practised by farmers, carriers, or by retailers as it should be. Large dairies, with few exceptions, conform to satisfactory sanitary methods in the conduct of their business but the vast majority of small milk producers and retailers are extremely lax in these respects. The receptacles in which the milk is conveyed by rail are frequently not properly cleaned and are often defective in construction in that they are not rain-proof and dust-proof. A few milk cans fulfilling these conditions and at a moderate price were to be seen at the exhibition and their presence there sufficiently showed the impression among experts that many of the cans in use were faulty. Great interest attached to the implement section of the show and to the elaborate display of refrigerating plant. An important competition between the inventions of various makers in this department was in progress from day to day throughout the show. The conditions for competing were that the plant should be capable of cooling milk twice daily from 80° to 45° F. at the rate of 100 gallons per hour, working for not more than six hours and the use of ice being excluded. The first prize was awarded to Messrs. William Douglas and Sons of Putney for a machine the cost price of which was only £120. In Great Britain the possibilities of goat's milk have not been fully recognised but in parts of Europe the only milk used is that of the goat. At the exhibition there was a large number of goats shown and it might be well if in future more encouragement were given to the breeding and increase of this useful milch animal. The unmistakeable flavour, we think, has prejudiced the inhabitants of this country unduly against a cheap and nutritious food, the hygienic supply of which can be managed under fairly easy conditions. The exhibition was a thorough success from first to last and the organisers deserve every credit for their work.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill are publishing the following new books in time for the new session:—A Text-book of Materia Medica, by C. R. Marshall, M.D., Ch.B. Vict., professor of materia medica in the University of St. Andrews and examiner in pharmacology at the University of London; Elements of Human Physiology, seventh edition, by Ernest H. Starling, M.D. Lond., Jodrell professor of physiology in University College, London; Materia Medica, Pharmacy, Pharmacology, and Therapeutics, ninth edition, by W. Hale White, M.D. Lond., lecturer on medicine at Guy's Hospital; and An Introduction to Chemical Analysis, by Hugh C. H. Candy, B.A., B.Sc., F.I.C., lecturer on chemistry in the London Hospital Medical College and analyst to the London Hospital. They also have in the press: A Manual of Pathology, by Richard T. Hewlett, M.D. Lond., professor of general pathology and bacteriology in King's College, London; and The Management of a Nerve Patient, by Alfred T. Schofield, M.D. Brux., honorary physician to the Friedenheim Hospital. —The death is announced of Mr. W. B. Saunders of Philadelphia who passed away on Oct. 1st. The deceased gentleman was the head of the well-known medical publishing house of W. B. Saunders and Co. of Philadelphia, which a few years back established a branch in London. His courteous and kindly manner gained for him a wide circle of friends in the medical profession.—Messrs. P. S. King and Son, Westminster, are publishing a work by Mr. B. Kirkman Gray entitled "A History of English Philanthropy." The period covered is from the dissolution of the monasteries to the taking of the first census.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—The annual meeting of the south-eastern division of the Medico-Psychological Association will be held at Normansfield, Hampton Wick, on Oct. 18th, when Dr. R. L. Langdon-Down will entertain the members of the association to luncheon. In the forenoon the house and grounds of Normansfield will be inspected and various business meetings will be held after luncheon. Dr. Langdon-Down will read a paper on Some Observations on the Mongolian Type of Imbecility and Dr. W. H. B. Stoddart a paper on psycho-physical evolution and dissolution entitled "On Instincts." In the evening the members will dine at the Café Monico, Piccadilly-circus, London, W. Tickets and further information can be obtained from the honorary secretary of the south-eastern division of the association, City of London Asylum, near Dartford, Kent.

A CASE OF TRIPLETS.—A Mrs. Burdekin, a patient at the St. John's Wood and Portland Town Dispensary, was on Oct. 7th safely delivered of triplets. The mother and the children are doing well. The secretary of the institution has made application on behalf of Mrs. Burdekin for the King's Bounty.

## BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, 41 and 43, Maddox-street, Bond-street, W.
The Wallet Series. Common Ailments and Accidents and their Treatment. By M. H. Naylor, M.B., B.S. Price 1s. net.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.
Military Hygiene. By Robert Caldwell, F.R.C.S., D.P.H., Lieut.-Colonel, Royal Army Medical Corps, formerly Medical Officer in Charge, District Laboratory, Meerut. Price 10s. 6d. net.

BELLEVUE AND ALLIED HOSPITALS, New York City (S. T. Armstrong, M.D., General Medical Superintendent).

Medical and Surgical Report of Bellevue and Allied Hospitals in the City of New York. Volume I., 1904. Edited by Alexander Lambert, M.D., Chairman, W. K. Draper, M.D., B. Farquar Curtis, M.D., and George Woolsey, M.D. Price not stated.

BRYCE, DAVID, AND SON, 173, West Campbell-street, Glasgow.

A System of Surgical Nursing. With an Index containing Useful Formulæ, Emergency Drill, &c. By A. N. M'Gregor, M.D., F.F.P.S.G., Assistant Surgeon to the Glasgow Royal Infirmary. Price 9s. net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

Introduction to Chemical Analysis. By Hugh C. H. Candy, B.A., B.Sc., F.I.C., Lecturer on Chemistry in the London Hospital Medical College, Analyst to the London Hospital. Price 3s. 6d. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

Essentials of Physiology for Veterinary Students. By D. Noël Paton, M.D., B.Sc., F.R.C.P. Ed., Superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh. Price not stated.

HODDER AND STOUGHTON, 27, Paternoster-row, E.C.

The Pathology of the Eye. By J. Herbert Parsons, B.S., D.Sc. Lond., F.R.C.S. Eng., Assistant Ophthalmic Surgeon, University College Hospital, Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. Volume II. Histology.—Part II. Price 15s. net.

KARGER, S., Berlin. (WILLIAMS AND NORGATE, 14, Henrietta-street, London, W.C.)

Arbeiten aus dem Pathologischen Institut der Universität Helsingfors (Finland). Herausgegeben von Prof. Dr. E. A. Homén. Band I., Heft 1-2. Price 12s. net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANGUS, HENRY BRUNTON, M.B., M.S. Durh., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

BRIMACOMBE, R. W., M.D. Brux., has been appointed Pathologist to St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.

CROSLAND, G. W. KILNER, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the Huddersfield Elementary Schools.

DRAKE, JOHN ALEXANDER, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed to the Medical Staff of the Tenby Cottage Hospital.

HAYDON, ARTHUR GEORGE, M.D. Edin., has been appointed Consulting Physician to the Torrington Sanatorium, Chesham, Bucks.

HEYWOOD, CHARLES CHRISTOPHER, M.A., M.B. Cantab., M.R.C.P. Lond., has been appointed Physician to the Manchester Children's Hospital.

KNUTSEN, LOUIS F., M.D., C.M. Edin., has been appointed Permanent Clinical Assistant to St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.

MILBURN, LESLIE, M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Medical Officer of Health of the Borough of Tynemouth.

PHILLIPS, JAMES, F.R.C.S.E., has been appointed Honorary Assistant Surgeon to Bradford (Yorks) Royal Infirmary.

PIERRE, R. R., M.B., B.S. Durh., has been appointed Medical Officer to the Post-office at Ryton, including Greenside.

RUTHERFORD, V. H., M.B. Cantab., has been appointed Medical Officer to the Electrical, Light, and X Ray Department of St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.

TRIBE, R. H., M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Metropolitan Hospital, Kingsland-road, N.E.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BODMIN, CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £135 per annum, rising to £155, with board, lodging, &c.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BRADFORD ROYAL INFIRMARY.—House Surgeon, also House Physician, both unmarried. Salary £100 per annum, with board and residence.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BRISTOL ROYAL INFIRMARY.—House Surgeon. Salary £100 a year, with apartments, board, and laundry.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum.

CATTAL, NEAR YORK, INEBRIATES' REFORMATORY.—Medical Superintendent. Salary £400 per annum, with residence, rations, coal, light, and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Senior House Physician and Surgeon. Salary £120 per year, with board, apartments, and laundress.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Assistant Physician. Also Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

HAMPSTEAD, BOROUGH OF.—Medical Officer of Health. Salary £600 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with board, apartments, washing, and attendance.

HULME DISPENSARY, Dale-street, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, attendance, coal, and gas.

LANCASTER, COUNTY LUNATIC ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

LEAMINGTON, WARNEFORD HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and apartments.

LINCOLN COUNTY HOSPITAL.—Junior Male House Surgeon, unmarried, for six months. Honorarium of £25, with board, residence, and washing.

LINCOLN, THE LAWN, LUNATIC HOSPITAL.—Assistant Medical Officer. Salary £100.

LONDON HOSPITAL MEDICAL COLLEGE.—Demonstrator of Biology.

LONDON HOSPITAL, Whitechapel, E.—Assistant Physician.

MACCLESFIELD, CHESHIRE COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £175, rising to £200, with apartments, board, and washing.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Resident Surgeon, as Junior for six months and as Senior for a like period. Salaries at rate of £80 and £120 per annum respectively, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Physician.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—Lectureship in Anatomy.

MIDDLESEX HOSPITAL, W.—Assistant Surgeon.

NEW HOSPITAL FOR WOMEN.—Three Clinical Assistants (females).

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and washing.

NORTHAMPTON GENERAL HOSPITAL.—Honorary Assistant Physician.

NOTTINGHAM GENERAL HOSPITAL.—House Surgeon. Salary £100, rising to £120, with board, lodging, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary at rate of 50 guineas a year, with board and residence.

PORTSMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £150, with board, lodging, and washing.

QUEEN'S JUBILEE HOSPITAL, Earl's Court, S.W.—Resident House Physician. Also Resident House Surgeon. Both for six months. Salaries £50 per annum, with board and lodging.

REETH UNION.—Medical Officer of Health and District Medical Officer. Salary £96 per annum, with fees.

ROYAL EAR HOSPITAL.—Clinical Assistants.

RUBERY HILL ASYLUM, near Birmingham.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, &c.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing.

WADSLEY, NEAR SHEFFIELD, WEST RIDING ASYLUM.—Fifth Assistant Medical Officer. Salary £140, rising to £160, with board, &c.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Harris in the county of Inverness and at Hailsham in the county of Sussex.

# Births, Marriages, and Deaths.

## BIRTHS.

BASSETT-SMITH.—On Oct. 6th, at R N. Hospital, Hasʿar, the wife of Fleet-Surgeon P. W. Bassett-Smith, R.N., of twin daughters.

BATTYE.—On Aug. 30th, at H.B.M. Consulate-General, Meshed, North Persia, the wife of Captain W. R. Battye, I.M.S., of a son.

ROBINSON.—On Oct. 5th, at Baroosa Lodge, Essex-road, N., the wife of M. J. Robinson, M.D., of a son.

WILLIAMS-FREEMAN.—On Oct. 7th, at Weyhill, Andover, the wife of J. P. Williams-Freeman, M.D., of a daughter.

## MARRIAGES.

URWICK—THORNTON.—On Oct. 4th, at Holy Trinity Church, Clapham Common, Reginald Henry Urwick, M.D., to Thirza Beatrice, eldest daughter of Ernest Layton Thornton, formerly of Oporto.

WALKER—BOLTON.—On Oct. 7th, at St. Marylebone Church, W., Henry James Davey Walker, M.R.C.S. Eng., L.R.C.P. Lond., to "Molly," only daughter of Horatio Nelson Bolton of Dormansland, Surrey.

## DEATHS.

GRANT.—On Oct. 5th, at Sackville-gardens, Hove, Major Alexander Gibb Grant, I.M.S. (retired).

MASTERS.—On Oct. 10th, at Oxford Villa, Castelnau, Barnes, William Hooper Masters, M.D., M.R.C.S., aged 67 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths*

# Notes, Short Comments, and Answers to Correspondents.

## THE RESPONSIBILITY OF THE ANÆSTHETIST.

*To the Editors of* THE LANCET.

SIRS,—I venture to solicit the expression of the opinion of yourselves or your readers on a point which is of considerable interest to all hospital residents.

A hospital surgeon, proposing to operate, summons a resident to give the anæsthetic. The anæsthetist on making his examination finds a condition which, in his opinion, renders the administration of an anæsthetic unjustifiably dangerous. The question I would ask is this: Is he acting within his rights in refusing to give the anæsthetic and thus risking dismissal, or, the surgeon insisting, has he done his duty in merely registering a protest? The question, of course, would not arise in a case in which operation holds out the only hope of saving life, but in the case I have in mind, partly hypothetical, partly founded on fact, the facts were as follows. The operation was one of cataract extraction in a very feeble old woman. Examination revealed marked emphysema, an enlarged and feeble heart, and albuminous urine. The operator objected to cocaine on account of the possible restlessness or nervousness of the patient jeopardising the success of the operation. I lay stress on the fact that the anæsthetist is a resident on account of his immediate future being more or less at the mercy of the honorary staff, while an honorary anæsthetist is more independent and, perhaps, more entitled to an opinion of his own.

I am, Sirs, yours faithfully,
RESIDENT.

*** "Resident's" question is complicated by being based admittedly upon a partly hypothetical case. As he sets out the situation we think that the resident medical officer would be right to protest against giving a general anæsthetic. But he has chosen an extreme example, because the operation is not being done to save life and also happens to be one where a local anæsthetic can be employed. There can be no general rule in the matter but in the vast majority of cases the resident will do well to take his instructions from his superior officer, who will presumably be every whit as anxious to run no risks with the patients' lives as his junior, and on whom the responsibility would rest for anything that followed upon his instructions.—ED. L.

## "DOIL."

*To the Editors of* THE LANCET.

SIRS,—I should be grateful if any of your readers would kindly give me the derivation and original meaning of the word "doil" (I am not sure if this be the correct way of writing it). It is a word used in Norfolk, and perhaps elsewhere, as applicable to a roadway.

I am, Sirs, yours faithfully,
Oct. 6th, 1905. ENQUIRER.

## AN EXHIBITION OF MEDICAL PREPARATIONS AND APPLIANCES.

*To the Editors of* THE LANCET.

SIRS,—Whilst appreciating, and thanking you very heartily for, your kind notice of our London Medical Exhibition held last week, may I point out that your representative has gone somewhat astray when he says: "The exhibition takes the place of the Chemists' Exhibition which has been held for the past 11 years at the Queen's Hall." The Chemists' Exhibition has never taken place in the Queen's Hall and is so very successful that there is not the slightest idea of discontinuing it. As a matter of fact, the twelfth will be held in the hall of the Royal Horticultural Society the last week in April, 1906.

I am, Sirs, yours faithfully,
Oct. 11th, 1905. THE SECRETARY.

P.S.—During the week of the Exhibition a medical man's note-book, with addresses, &c., was found in a hansom cab and sent to Scotland Yard.

## HEATING APPARATUS.

*To the Editors of* THE LANCET.

SIRS,—"Anxious Practitioner" may find either George's Calorigen, made by Messrs. Farwig and Co., Queen-street, London, E.C., or Bond's Euthermic stove, invented by Dr. F. T. Bond of Gloucester, answer his requirements.

I am, Sirs, yours faithfully,
Oct. 11th, 1905. J. G.

*To the Editors of* THE LANCET.

SIRS,—In reply to an "Anxious Practitioner" I shall be pleased to show him in operation an apparatus which has effectually supplied pure and warm air to this house for several years.

I am, Sirs, yours faithfully,
WM. SIMPSON CRAIG, M.D. St. And.

Beaufort House, Ham, Surrey, Oct. 11th, 1905.

## A WASHABLE WALLET FOR NURSES.

WE have received from Miss Barry, a hospital nurse, a specimen of a washable wallet invented by herself for the use of nurses. The wallet is made of some washable material and, like the ordinary leather wallet, is fitted with compartments for scissors, dressing forceps, probes, and the other instruments which are generally carried by a nurse during her work in the ward or in private practice. Miss Barry considers, and we think rightly so, that the old-fashioned leather wallet is insanitary from a certain point of view because it cannot be sterilised. The wallet now before us could certainly easily be sterilised by boiling without doing it any harm and we think it is a decided improvement upon the old-fashioned leather apparatus. Miss Barry's wallet can be obtained from Messrs. Maw, Son, and Sons, Aldersgate-street, London, E.C.

*B. M.*—The condition mentioned by our correspondent is one that a surgeon could easily cope with. The disease is sometimes obstinate but yields to treatment. We never prescribe for patients in the columns of THE LANCET.

*Kappa.*—We know all about the firm, what it sprang from, and how the present moving spirit formerly occupied his time; but we appreciate the kind offer of our correspondent.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (16th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

**TUESDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

**WEDNESDAY (18th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

**THURSDAY (19th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.). Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

**FRIDAY (20th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.).

**SATURDAY (21st).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**TUESDAY (17th).**—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Dr. Herringham and Dr. W. S. A. Griffith: Necroses of Cortex of both Kidneys with Thrombosis of Cortical Arteries, occurring in the Puerperal State.—Dr. Dudgeon and Dr. Ross: Phagocytosis.—Dr. H. A. Lediard: (1) Diverticulum of Bladder; (2) Tuberculosis of Thyroid.

CHELSEA CLINICAL SOCIETY (Chelsea Dispensary, Manor-street, King's-road, S.W.).—8.30 P.M. Introductory Address:—Dr. J. B. Ball (President): On the Nasal Treatment of Asthma.

**THURSDAY (19th).**—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8 P.M. Card Specimens will be shown by Mr. C. Wray. 8.30 P.M. Presidential

Address: Mr. P. Smith. Papers:—Dr. Edridge-Green: Colour Systems.—Mr. C. Marcus: Notes on a Peculiar Pupil Phenomenon in Two Cases of Partial Iridoplegia.—Mr. S. L. Johnson: A New Form of Spectacle Lens which is Free from some of the Faults inseparable from Ordinary Lenses used in Vision (invented by Dr. Tscherning of Paris).—Mr. L. Paton: The Value of the Opsonic Index for Tubercle in Phlyctenulæ (preliminary note).

CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—7.30 P.M. Annual General Meeting of London Branch of British Child-Study Association. 8 P.M. Hon. Sir John Cockburn, K.C.M.G.: Address. (Arranged by the British Child Study Association.)

**FRIDAY (20th).**—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos street, Cavendish-square, W.).—5.30 P.M. Cases and Specimens will be shown by Dr. T. K. Whipham, Dr. G. A. Sutherland, Dr. G. Carpenter, Dr. R. Cautley, Mr. P. L. Mummery, and Mr. W. Milner Burgess. Short Communications:—Dr. J. E. H. Sawyer (Birmingham): Diffuse Angeloma of the Liver (lantern demonstration).

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (16th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Clinique. (Skin.) 5.15 P.M. Dr. G. B. Herman: Pelvic Peritonitis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Suppuration of the Accessory Sinuses of the Nose (with lantern slides).

**TUESDAY (17th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Campbell: Clinique. (Medical.) 5.15 P.M. Dr. H. Tilley: The Diagnosis and Treatment of Hoarseness.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Suppuration of the Accessory Sinuses of the Nose (with lantern slides).

ROYAL INSTITUTE OF PUBLIC HEALTH (19, Bloomsbury-square, W.C.).—5 P.M. Prof. T. Oliver: Some of the Maladies caused by the Air we breathe in the Home, the Factory, and the Mine, including a description of Caisson Disease or Compressed Air Illness. (Harben Lecture.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. F. Buzzard: Methods of Examining Cases.

**WEDNESDAY (18th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. L. Barnard: Clinique. (Surgical.) 5.15 P.M. Dr. R. Jones: The Relation of Epilepsy to Insanity.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

UNIVERSITY COLLEGE, LONDON (Gower-street, W.C.).—4 P.M. Clinical Lecture:—Mr. A. E. Barker: The Hands of Surgeons and Assistants in Operations.

**THURSDAY (19th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. G. H. Savage: Climacteric Insanities.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. H. Cole: Intemperance in Relation to Mental Diseases.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Dr. Roberts: Cases from the Wards.

CHARING CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Demonstration of Surgical Cases. (Post-Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: The Treatment of Eczema in all its Forms. (Chesterfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Dr. J. E. Squire: Pulmonary Tuberculosis in Children. (Lecture I.) (Post-Graduate Course.)

WESTMINSTER HOSPITAL MEDICAL SCHOOL (University of London) (Caxton-street, Westminster, S.W.).—5 P.M. Lecture:—Dr. B. Abrahams: Applied Physiology. (Lecture II.)

**FRIDAY (20th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. W. Dodd: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Russell: Nephritis. (Lecture I.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. F. Buzzard: Electrical Testing.

NORTH-EAST LONDON POST GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Opening Lecture of Winter Session:—Dr. P. Kidd: Pericarditis and its Effects.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... ... | 0 8 2 | Three Months ... ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Oct. 12th, 1905.

| Date. | | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radia in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| Oct. | 6 | 30·10 | N. | ... | 96 | 53 | 40 | 39 | 43 | Fine |
| ,, | 7 | 30·25 | N.W. | 0·01 | 77 | 56 | 42 | 46 | 49 | Cloudy |
| ,, | 8 | 30·31 | N. | ... | 59 | 54 | 48 | 49 | 51 | Overcast |
| ,, | 9 | 30·36 | W. | ... | 71 | 61 | 51 | 51 | 52 | Overcast |
| ,, | 10 | 30·38 | N.E. | ... | 64 | 58 | 52 | 51 | 55 | Overcast |
| ,, | 11 | 30·45 | N.E. | ... | 93 | 56 | 49 | 49 | 50 | Cloudy |
| ,, | 12 | 30·33 | N. | 0·01 | 54 | 53 | 50 | 50 | 51 | Overcast |

**During the week marked copies of the following newspapers have been received:**—*Fifeshire Advertiser, Daily Mirror, Army and Navy Gazette, Birmingham Mail, Morning Post, Standard, Yorkshire Post, Daily Graphic, Daily Chronicle, Plymouth Eastern Morning News, Daily Mail, Plymouth Mercury, Brighton Gazette, Blackpool Gazette, Dumfries Courier, Carmarthen Journal, Daily Express, Maryland Medica Journal (U.S.A.), Kirkcudbrightshire Advertiser, Canadian Journa of Medicine and Surgery, &c.*

## Communications, Letters, &c., have been received from—

A.—Messrs. Adlard and Son, Lond.; Association of Women Pharmacists, Lond.; Mr. W. C. Amery.

B.—Mr. C. A. Backlin, Lond.; Mr. W. V. Ball, Lond.; Bristol Royal Infirmary, Secretary of; Messrs. J. Beal and Son, Brighton; Colonel S. Haslett Browne, I.M.S., Hollywood; Mr. T. P. Baldwin, Lond.; Mr. W. Bates, Lond.; Surgeon-General Bidie, Southsea; Mr. S. de Brath, East Grinstead; Dr. W. Blackwood, Camborne; Mr. F. D. Byrne, Lond.; *The British and Colonial Druggist*, Lond., Secretary of; Dr. S. Bernheim, Paris.; Mr. J. Paul Bush, Clifton; Mr. C. Birchall, Liverpool.

C.—Dr. T. Christen, Zürich; Messrs. T. Christy and Co., Lond.; Messrs. A. H. Cox and Co., Brighton; Dr. G. H. Colt, Lond.; Mr. Michael Cahill, San Francisco; Mr. F. V. Chalmers, St. Leonards-on-Sea; Cotswold Sanatorium, Stroud, Medical Superintendent of; Mr. W. H Compton, Brighton; Dr. E. P. Cathcart, Glasgow; Dr. W. Cross, Liverpool; Dr. Harry Campbell, Lond.

D.—Mr. P. L. Daniel, Lond.; Mr. R. Darke, Lond.; Dr. G. W. Dampfylde Daniell, Liverpool.

E.—Messrs. Elliott, Son, and Boyton, Lond.; R. M. P.; Miss M. K. Evans, Sidcup.

F.—Mr. John Foster, West Hartlepool; Messrs. Feuerheerd and Co., Lond.; Surgeon A. F. Fleming, R.N., Gibraltar; Mr. H. Sydney Foradike, Cardiff; Folkestone Medical Society, Hon. Secretary of.

G.—Mr. Sidney Gomes, Tokyo; Glasgow Medico-Chirurgical Society, Editorial Secretary of; Mrs. Stephen Glanville, Lond.; Dr. Frederic Griffith, New York; Mrs. M. D. Green, St. Louis, Missouri; Dr. M. H. Gordon, Lond.; Messrs. Gordon and Gotch, Lond.; Dr. H. Bellamy Gardner, Lond.

H.—Mr. F. B Heubeck, Carmarthen; Messrs. Hooper and Jackson, Lond.; Mr. K. N. Humphreys, Portsmouth; H. E. T.

J.—Mr. P. R. Jones, Lond.; J. G.

K.—Messrs. P. S. King and Son, Lond.; Messrs. Knoll and Co., Lond.; Kingswood Sanatorium for Ladies, Peppard Common; Mr. W. H. Kesteven, Lond.; Messrs. Kuhner, Henderson, and Co., Lond.; Messrs. R. A. Knight and Co., Lond.

L.—Mr. R. T. Lang, Lond.; Locum, Leicester; Captain J. C. Holdich Leicester, I.M.S., Lond.; Messrs. Loescher and Co., Rome; Messrs. Lee and Nightingale, Liverpool; Mr. W. Lawton, Cambridge; Messrs. Charles Letts and Co., Lond.

M.—Mr. R. Maynard, Lond.; Medical Society of Victoria, Melbourne, Hon. Treasurer of; Mr. R. Mosse, Berlin; Dr. W. J. McCardie, Birmingham; Medico-Psychological Association, South Eastern Division, Hon. Secretary of; Medicus; Dr. T. Maxwell, Woolwich; Sir John Moore, Dublin; Messrs. C. Mitchell and Co., Lond.; Messrs. Macmillan and Co., Lond.; Messrs. Millar, Son, and Co., Lond.; M. P.; Mrs. M. E. Miller, Vittorio.

N.—Professor G. H. F. Nuttall, Cambridge; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.; Nottingham General Hospital, Secretary of.

O.—Messrs. Ornstien Bros, Lond.; Mr. Thomas Overy, Shrewsbury.

P.—Dr. R. W. Philip, Edinburgh; Mr. Y. J. Pentland, Edinburgh; Dr. H. G. Pesel, Edinburgh; Portsmouth Borough Asylum, Clerk of; Parkside Asylum, Macclesfield, Clerk of; Private Practitioner; Dr. D. W. Patterson, Newcastle-on-Tyne; Messrs. Peacock and Hadley, Lond.; Mr. F. B. Potter, Lond.; Mr. A. J. Pressland, Edinburgh.

R.—Dr. R. R. Rentoul, Liverpool; Reeth Rural District Council, Clerk of; Messrs. B. J. Reid and Co., Lond.; Messrs. A. Robb and Co., Lond.; Messrs. Reynolds and Branson, Leeds.

S.—Dr. F. P. Sarjant, Withington; Dr. James Savege, Hull; Mr. W. M. Storar, Lond.; Dr. John Lindsay Steven, Glasgow; Dr. Joseph Smyth, Naas; Major T. Stodart, I.M.S., Akyab; Sanitary Publishing Co., Lond.; Specialist Press, Ltd., Lond.; Dr. C. Slater, Lond.; Sanitas Co., Lond., Secretary of; Scholastic, Clerical, &c., Association, Lond.; Messrs. G. Street and Co., Lond.

T.—Dr. George Turner, Pretoria; "Thornhill," Weston-super-Mare.

V.—Mr. J. W. Vickers, Lond.

W.—Mr. J. R. Williamson, Lond.; Mr. J. Williams, Bradford; Messrs J. Wright and Co., Lond.; Mr. Percy d'Erf Wheeler, Jerusalem.

## Letters, each with enclosure, are also acknowledged from—

A.—Messrs. Allen and Hanburys, Lond.; A. L. M.; A. V. C.; A. R. V.; A. B. L.; A. M. Y.; Mr. R. Aubrey, Brent Knoll; A. B. G.

B.—Dr. D. G. Bennett, Southport; Dr. R. T. Born, Port Stanley, East Falkland Island; Brecon and Radnor Asylum, Talgarth, Clerk of; Mr. Bailey, Alcester; Mr. J. B. S. Brown, Snettisham; Mr. R. Stanmore Bishop, Manchester.

C.—Mr. R. A. Cameron, Cathcart; Mrs. Chapman, Lond.; Cliffe Hydro, Ilfracombe, Director of; Messrs. J. and A. Carter, Lond.; Clapham Maternity Hospital, Lond.; C. F. W.; C. W. F.; Sir James Crichton-Browne, York; Mr. F. Collenette, Lond.; Messrs. R. L. Casson and Co., Lond.; Mr. F. W. Clarke, Choriton-cum-Hardy; Messrs. J. and G. Collie, Aberdeen.

D.—Mr. J. F. D'Mello, Rangoon; Messrs. Durant and Co., Lond.; Derbyshire Royal Infirmary, Derby, Secretary of; Dispenser, Darlington; Dr. J. P. Dee, Walton-on-the-Naze.

E.—A. R. Elliott Publishing Co., New York; E. A.; E. B. M.; E. M. R., Durham; E. R. W.; E. W. R.; E. M.

F.—F. W.; Farringdon General Dispensary, Lond., Secretary of.

G.—Mr. H. J. Glaisher, Lond.; Mr. H. H. Gunnell, Peterchurch; Messrs. F. Gould and Co., Lond.; Mr. L. D. Gadre, Nagpur, India; G. A., Tunbridge Wells; Mr. A. R. Green, Ledbury.

H.—Dr. T. B. Henderson, Lond.; Mr. J. T. Hyatt, Shepton Mallet; Dr. C. Heaton, Westgate-on-Sea; Captain H. Halliday, I.M.S., Sanawar, India; Haydock Lodge, Newton-le-Willows; H. C. F.; Dr. W. H. Hill, Old Basford; Miss Howell, Birmingham; Mr. W. H. Hodton, Leamington Spa; *Hampshire Independent*, Southampton, Manager of; Dr. C. J. Harrison, Lond.; Mr. H. Hutchinson, Lond.; H. J.; H. P. R.; Mr. W. B. Harris, Quorn.

I.—International News Co., Lond.

J.—Mr. H. Jones, Hereford; J. T.; Dr. W. Denton Johns, Parkstone; J. H.; J. R.; Jeyes Sanitary Compounds Co., Lond.

K.—Dr. C. R. Killick, Williton; Messrs. B. Kuhn and Co., Lond.

L.—Dr. D. Lewis, Port Talbot; Leith Hospital, Secretary of; Dr. A. H. N. Lewers, Lond.; Dr. G. M. Lowe, Shide; Leeds Union, Clerk of; Loughborough and District General Hospital, Secretary of; L. E. S.

M.—Mr. R. McCaskie, Lond.; Mr. G. B. McKean, Lond.; Dr. A. Marmorek, Paris; Colonel A. C. MacLeod, I.M.S., Lond.; Dr. C. K. Millard, Leicester; Mr. C. F. Myers-Ward, Northwood; Medicus, Lond.; Messrs. Mate and Sons, Boscombe; Mitchell Automobile Agency, Lond.; Mr. W. Morgan, Pontlottyn; Messrs. C. Midgley, Manchester.

N.—North Staffordshire Infirmary, Hartshill, Secretary of; Newton College, Newton Abbot, Principal of.

P.—Mr. C. E. Player, Dover; Miss M. Powell, Treharris; Mr. T. Prince, Lond.; Dr. P.; Rev. C. R. Powys, Rofford; Dr. H. M. Page, Lond.; Mr. F. W. Perry, Lond.; Paddington Guardians, Clerk of.

Q.—Queen's College, Galway, Registrar of.

R.—Res. Surg. Officer, Birmingham; R. H. M.; R. C. G.; Mr. A. W. Mayo Robson, Lond.; Rostrevor Sanatorium, Warrenpoint, Secretary of; Captain F. G. Richards, R.A.M.C., Lond.; Mr. R. A. Ross, Liverpool.

S.—Mr. W. M. Scott, Knock; Messrs. Spiers and Pond, Lond.; Mr. H. M. Stratford, Guilsborough; Supt., Shoreham; Messrs. Sykes, Josephine, and Co., Lond.; Southampton Corporation, Borough Treasurer of; S. P.; S. J.; Smith's Advertising Agency, Lond.; St. John's Hospital for Diseases of the Skin, Lond., Secretary of; Southport Infirmary, Secretary of; Dr. C. S. de Segundo, Lond.

T.—Taunton and Somerset Hospital, Secretary of; Teignmouth Hospital, Secretary of; T. H.; Dr. G. Thornton, Pretoria; Mr. J. Thin, Edinburgh.

W.—Mr. C. G. Russ Wood, Shrewsbury; Messrs. Williams, Humbert, and Co., Lond.; Messrs. H. Wilson and Son, Lond.; Rev. R. J. Williams, Liverpool; Sisters Wilcox and Reynolds, Lond.; W. J.; W. E. T.; W. E. S.; Mr. W. F. A. Walker, Dinas Mawddwy.

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d. Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department ... rance—J. ASTIER, 51, Rue Bapts, Asnières, Paris.